

NEW CHEVY MALIBU VS. THE ESTABLISHMENT

# CAR AND DRIVER

APRIL 2016

INTELLIGENCE. INDEPENDENCE. IRREVERENCE.

# BMW M2

HOLD ON TO YOUR  
SPLEEN! IT'S...

**MUNICH'S  
MINIATURE  
MONSTER**



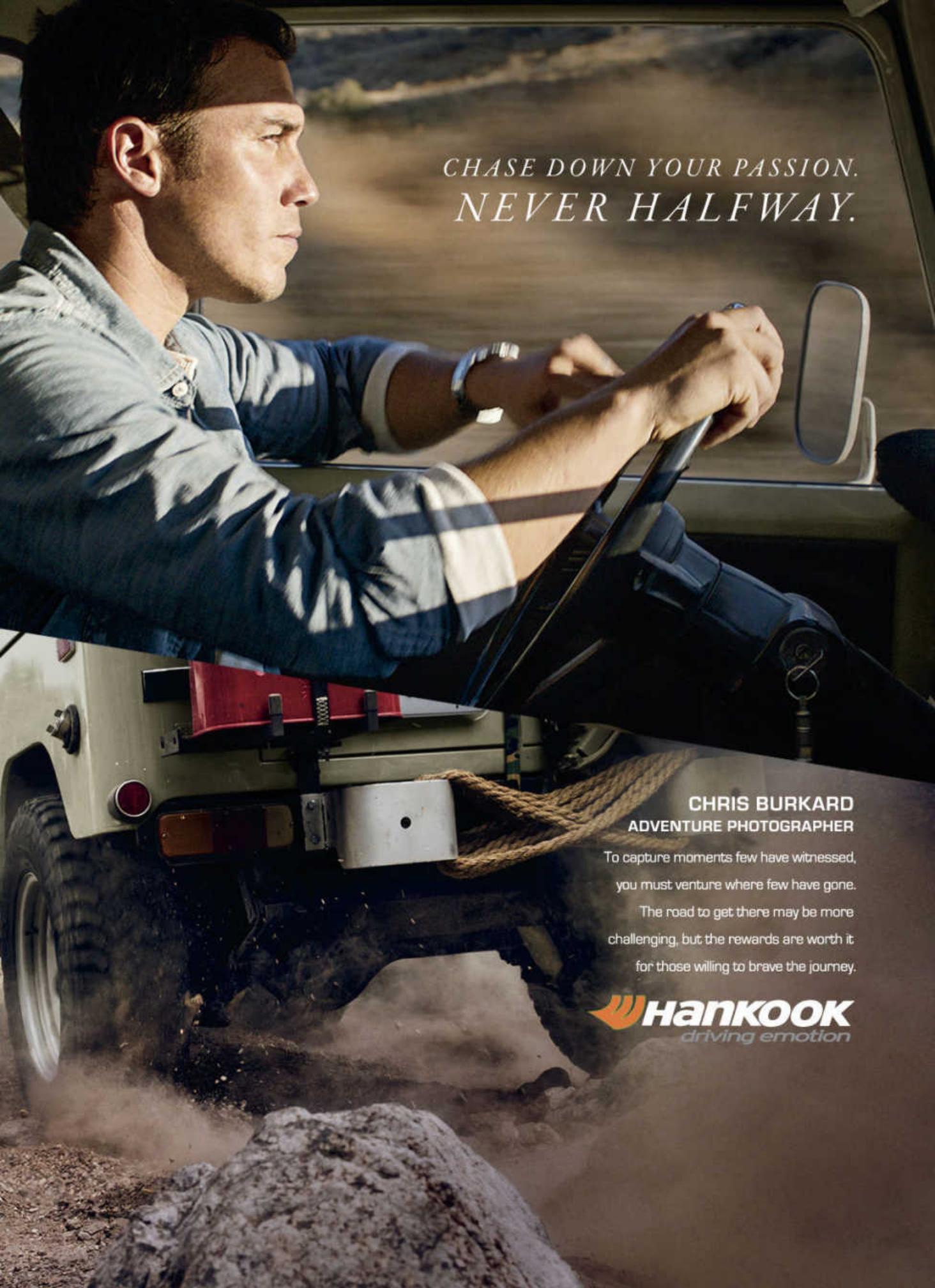
AND A SIX-SPEED  
MANUAL  
IS STANDARD!

PLUS

**ALL-NEW  
CADILLAC CT6**

**DRIVEN: BUICK CASCADA, JAGUAR F-PACE,  
MERCEDES-AMG G65, VW BEETLE DUNE**





CHASE DOWN YOUR PASSION.  
NEVER HALFWAY.

**CHRIS BURKARD**  
ADVENTURE PHOTOGRAPHER

To capture moments few have witnessed,  
you must venture where few have gone.

The road to get there may be more  
challenging, but the rewards are worth it  
for those willing to brave the journey.

 **HANKOOK**  
driving emotion



Innovation  
that excites

## WITH GREAT POWER COMES GREAT RECOGNITION.

For yet another year, our VQ engine continues to dominate the field. For this latest generation, the 300-horsepower 3.5L V6 that powers our new Maxima<sup>®</sup> we gave it a lighter, more efficient intake manifold and even equipped it with GT-R<sup>®</sup>-inspired sodium-filled exhaust valves. The result? It just placed on Ward's 10 Best Engines<sup>®</sup> list for the 15th time, making it the most celebrated engine in the award's history. Now back to work on making it even better.



Nissan's VQ engine has placed on Ward's 10 Best Engines list more than any other engine.

WARD'S  
 10 Best  
Engines.

*in this issue***050**

COMPARISON TEST

**CALIFORNIA DREAMING**Chevrolet Malibu LT, Honda Accord Sport, Mazda 6 i Touring, Toyota Camry SE.  
by Aaron Robinson**003**

04.2016



## ▼ FEATURES

**042****CAR MEETS ROAD**  
**BMW M2**We take the hot new coupe to Death Valley and put the hammer down.  
by Tony Quiroga**058****ROAD TEST**  
**CADILLAC CT6 PLATINUM AWD**The sports sedan that's cleverly disguised as a luxury car.  
by Jeff Sabatini**064****PROTOTYPE DRIVE**  
**JAGUAR F-PACE**The ritualistic beating of yet another mule.  
by Mike Duff**068****FEATURE**  
**GROWING THE SUPER GOLD FUTURE**Meet the Silicon Valley messiah who is taking the car back to the garden.  
by John Pearley Huffman**075****LONG-TERM TEST**  
**SOME LIKE IT ROUGH**

The fourth-generation Subaru WRX is better on pavement than ever before. But it doesn't forsake its rally-car rawness.

by Eric Tingwall

**ON THE COVER**The BMW M2 is not a red Mustang.  
photography by Greg Pajo

004  
04.2016  
caranddriver.com

. in this issue



▼ COLUMNS

007  
**EDDIE ALTERMAN**  
Detroit Coupe City.

026  
**JOHN PHILLIPS**  
That's how the  
Mercedes bends.

030  
**AARON ROBINSON**  
My next toy will have a  
barf bag.

032  
**EZRA DYER**  
Envyng the blind faith  
of the brand-loyal.

034  
**PETER MANSO**  
Why do racers vote  
Republican?

▼ UPFRONT

015  
**REVEAL OF THE MONTH**  
**BUICK AVISTA**  
The rear-drive  
Detroit-show concept  
faces judgment day.

020  
**SIT, STAY, CORNER**  
We ask the experts: Why  
do dogs love cars?

022  
**INFOGRAPHIC**  
**THE PRICE OF**  
**POWER**  
Mapping out who gives  
you the most optional  
ponies per dollar.

024  
**THIS IS NOT A**  
**MADE-UP NUMBER**  
A look into advisory  
cornering speeds.

▼ DRIVELINES

085  
**BUICK CASCADA**  
The company's new  
marketing campaign is a  
decent car, too.

088  
**TESTED MERCEDES-**  
**AMG G65**  
It's like how much more  
absurd could this be?  
And the answer is none.  
None more absurd.

090  
**VOLKSWAGEN**  
**BEETLE DUNE**  
Mad Max: Sesame  
Street.

092  
**TESTED 2015**  
**MITSUBISHI**  
**LANCER**  
**EVOLUTION FINAL**  
**EDITION**  
This is the end, not-so  
beautiful friend.

▼ ETC.

006  
**BACKFIRES**  
Red cars, fat hookers,  
and a ripping  
meditation on human  
folly.

096  
**ROAD-TEST**  
**DIGEST**

104  
**WHAT WE'D DO**  
**DIFFERENTLY**  
Jamie Hyneman and  
Adam Savage.

▼ ON THE WEB

FIRST DRIVE  
**2017 SMART**  
**FORTWO**  
**CABRIOLET**  
You could see yourself  
driving one. Not an  
April Fools' joke.  
**CARandDRIVER.com/**  
**2017FortwoCabrio**

INSTRUMENTED TEST  
**2016 RAM 3500**  
**DIESEL CREW CAB**  
**4X4**  
The quintessential  
workaholic pickup  
truck, now with an  
earth-shaking 900  
pound-feet of torque.  
**CARandDRIVER.com/**  
**2016Ram3500**

FIRST DRIVE  
**2016 ASTON**  
**MARTIN DB9 GT**  
Will Aston ever let the  
long-serving DB9 go  
gentle into that good  
night? Hardly.  
**CARandDRIVER.com/**  
**2016AstonDB9**

# Keep Your No-Ticket New Year's Resolution

All-New

**MAX**<sup>360.</sup>

Power. Precision. 360° Protection.



Experience ultimate intelligence and instantly know the source of surrounding threats.

Dual-antenna detection rapidly scans to provide full-circle protection.

#### Defender™ Database

Access the largest, most up-to-date resource to alert drivers to speed cameras, red-light cameras, speed traps and other risk areas

#### AutoLearn Technology

Patented anti-falsing technology uses the power of GPS and the exact frequency to learn and automatically reject door openers and unwanted false alerts

#### ESCORT Live! App

Connect to the ESCORT Live app on your smartphone and use Bluetooth® to sync your radar detector for crowd-sourced alerts and ticket prevention information

[EscortRadar.com/Max360](http://EscortRadar.com/Max360)  
800.588.4554

**ESCORT**  
Radar + Laser Detectors

# backfires

006

04.2016

hosted by ED.



Sic your dogs on us at:  
[editors@caranddriver.com](mailto:editors@caranddriver.com)  
or join the discussion at:  
[backfires.caranddriver.com](http://backfires.caranddriver.com)

## ACCORDING TO YOU

Your January 10Best issue is the highlight of my magazine year, a 10-course banquet, and I savor every bite. Reading it always makes me want to buy one of the cars, and last year I did: a beautiful black, six-speed, six-cylinder Honda Accord coupe. It is definitely, as you said, "better than it has to be."

**TOM DENNISON**

FAIRFIELD, CONNECTICUT

I must remind you esteemed scribes that in 2013, the Mazda 6 finished first and beat the Honda Accord in a comparo. In your latest 10Best list, the Accord makes the grade but not the 6.

**JIM SMITH**

MOKENA, ILLINOIS

How did the Accord win out over the Mazda 6? The 6 has a better chassis, looks better inside and out, and, unlike the Accord, you can get a manual transmission on a well-equipped car. The 6 gets dinged for its 184-hp engine, which is nearly identical to the Accord's. What gives?

**JAMES S. BIGGS**

WASHINGTON, D.C.

*Turn to page 050 if you guys really want to freak out—Ed.*

My synopsis of the 10Best list: 1. GT350/GT350R: Rare and marked up to \$100K. 2. MX-5 Miata: Tight fit. 3. Camaro: Claustrophobic. 4. M235i: Maybe the best performer for \$50K. 5. CTS Vsport: Perfect for a Russian oligarch. 6. Accord: Okay. Good car. 7. Mazda 3: Best value. 8. Boxster/Cayman: Everyone wants it, but few can afford it. 9. Model S 70/70D: EVs help, but it's the cattle business that's the real problem. 10. Golf/GTI: The greatest car according to C/D.

**ALLEN HICKS**

MEDFORD, OREGON



## ★

### RED EYE

My eyes hurt after looking at the cover of the January "10Best Cars for 2016." The Chevy Camaro looks as if its right-front tire is flat, and the Ford Mustang's stripe is off-center on the hood toward the left. Plus the Tesla doesn't line up with the Ford, and the rest of the cars are all at different angles as well. Did someone spike the eggnog during the holiday party?

**SNEEZY**

BINGHAMTON, NEW YORK

*What you're seeing is an optical illusion caused by living in a tiny cottage and working in a nearby mine—Ed.*

Once again, the cover of your January 10Best issue proves that you guys have a fixation with red. So, my question is, who does your staff think has the best red? My vote is for Nissan/Infiniti, in a virtual tie with Taylor Swift's lipstick. Please advise.

**GARY CAPPS**

OSKALOOSA, IOWA

Do red cars sell more copies? The cover has all 10 winners displayed in red, yet many of these same cars seem to have been tested in other colors as shown in the pictures accompanying the analysis and defense of the chosen winners.

**KERRY SCHUMACHER**

COLUMBIA, MISSOURI

*Well, you bought it—Ed.*

My goodness, what happened with the art department? Did they run up against a deadline and have to go with what they had at that point? Ten cars pictured without names or arrows, and they're all red! How do you expect an enthusiast to tell the difference between, say, a Model S and a Camaro?

So, I just want to help you out with my version of the cover. I know how you love your arrows.

**AL RIBSKIS**

CHICAGO, ILLINOIS

## ENGINEERING 101

I'm in total awe of those Cadillac engineers mentioned in the CTS Vsport's 10Best coverage! An oil cooler will impact reliability and durability? Wow. Who would have thought? I'll sleep so much better after reading that in-depth analysis.

**PETE BAUER**

VERO BEACH, FLORIDA

## ENGINEERING 201

Please explain to me how gun-drilling a crankshaft not only shaves mass, but relieves crankcase pressure, as stated in

Ezra Dyer's January 2016 article, "Ford Mustang Shelby GT350/GT350R." I can't wait to be enlightened.

**JOHN VITALICH**

SEATTLE, WASHINGTON

*The rise and fall of the pistons causes major pressure fluctuations inside the crankcase. This, in turn, results in windage losses as the crank and rods move through the maelstrom. One means of reducing this loss is to gun-drill the center of the crank, allowing the pressure rise under one pair of pistons to bleed past the main bearing webs into the next bay. The net result is more power—Ed.*

. **editor's letter**

You'd think that, with oil dipping below \$30 a barrel and insatiable consumer demand for vehicles that are ever larger, ever taller, and ever more stuffed, piñata-like, with electronic candy, the world's automakers would've used January's North American International Auto Show to display nothing but scaled-down Freightliners.

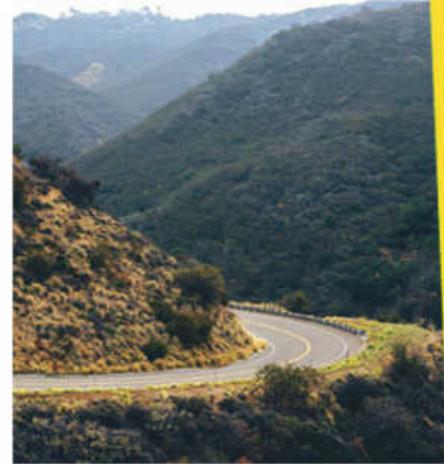
While it is true that there was a smattering of new and conceptual trucks, crossovers, and SUVs on the stands at Detroit, their numbers in no way reflected the public's current ute-buying frenzy. With the exception of the Kia Telluride, a beautiful and blocky love child of the Volvo XC90 and Mercedes-Benz GLS, it was plain that carmakers' passions don't run to the crossover. Their wallets, sure. But their hearts?

Instead, the carmaker id is fixated on the two-door, the coupé if you're feeling Frenchy, that sleekest of automotive forms, the worst-selling of all car types. A two-door is long enough to allow designers to resolve their linework, trim enough to eradicate visions of hour-long commutes. It is the perfect screen, then, on which to project dreams.

So rather than using their recent flushness to bore showgoers with yet another bigger box, carmakers indulged fantasy. And, to paraphrase the great Bard of the West, I ain't mad at them, for this gave us the Lexus LC500, the Infiniti Q60, our cover's BMW M2, and my favorite, the powerful yet elegant Buick Avista [page 015], a coupe that owes a bit of its mien to the Tesla Model S and the Jaguar F-type. Buick seemed to be saying: "Yeah, we know people still think we're the guys with the bad toupees. But we're not going to change anyone's mind with that Envision over there."

**Eddie Alterman**

EDITOR-IN-CHIEF



**NEW PERSPECTIVE  
ON THE ROAD**



by  
**Derek Powell**

Modern technology is a wonderful thing. It's enabled today's cars to be smarter, safer, and more fuel-efficient. You know what else technology is good for? More horsepower. Better handling. All those little zeroes and ones, conspiring to exponentially ratchet up the fun quotient.

And when the weekend arrives and the road calls out, it's time to put all that technology to good use. Which is why currently my windows are down, the breeze is

WINDOWS ARE DOWN, THE  
BREEZE IS STREAMING IN AS  
THE SCENERY SINGS PAST AND  
MY HANDS ARE FIRMLY ON  
THE WHEEL

streaming in as the scenery sings past and my hands are firmly on the wheel. A corner looms ahead and I'm on the brakes, slowing the speed, tucking into the corner, clipping the apex and back on the gas. Dawn is breaking over the Santa Monica Mountains and as I crest over a rise, I'm treated to a spectacular 360-degree view of the ocean below me and downtown LA in the distance. A binary effort with a spectacular analog payoff.

**GOLF ROUNDS**

I was happy to see the new Volkswagen Golf make it into your 10Best issue. But why does the 1.8-liter TSI engine have 184 or 199 pound-feet of torque? I don't recall seeing a choice of torque in any of your specifications tables in my 47 years of readership. My salesman never offered me this choice on my new Golf.

**JAAK LAAN**

OTTAWA, ONTARIO

*The 1.8T's manual transmission isn't rated to handle 199 pound-feet of torque, so VW limits those cars to 184 pound-feet for durability—Ed.*

Shocked to see the Golf on your 10Best list! How can you reward Volkswagen for lying to its customers and putting at risk the health of the public at large? All in the interest of winning market share. So many other great cars and car companies deserved recognition. I do believe this also tarnishes C/D's brand. Otherwise you're a great magazine, and I'm sorry to see your 10Best list lose its luster.

**TONY BARNARD**

WHISTLER, BRITISH COLUMBIA

**BEST OF TIMES**

I am having trouble reading your 10Best issue. It's not my reading skills, but the page layout. It hurts my eyes. Nothing guides my eyes into any of the writing.

**BEST LETTER**

"Candidates for the Rework Lot" in your 10Best issue was a terrific feature. John Phillips's comment that the Mercedes-AMG C63 S is "Big, dirty fun, but so are fat hookers" raises a couple of questions. How would he know that? What kind of research is C/D conducting?

**D.S. HOLMES**

SOUTH HILL, WASHINGTON

# CAR AND DRIVER

**EDITOR-IN-CHIEF** Eddie Alterman

**DEPUTY EDITOR** Daniel Pund  
**EXECUTIVE EDITOR** Aaron Robinson  
**MANAGING EDITOR** Mike Fazioli  
**FEATURES EDITOR** Jeff Sabatini  
**TECHNICAL EDITORS** K.C. Colwell, Eric Tingwall  
**COPY CHIEF** Carolyn Pavia-Rauchman  
**EDITOR, MONTANA DESK** John Phillips  
**STAFF PHOTOGRAPHER** Marc Urbano  
**EUROPEAN EDITOR** Mike Duff  
**CAROLINAS EDITOR** Ezra Dyer

**CREATIVE DIRECTOR** Darin Johnson  
**TECHNICAL DIRECTOR** Don Sherman  
**DESIGN DIRECTOR** Nathan Schroeder  
**SENIOR EDITORS** Tony Quiroga, Jared Gall  
**ASSOCIATE MANAGING EDITOR** Juli Burke  
**COPY EDITOR** Jennifer Harrington  
**ASSOCIATE DESIGNER** Jennifer Choi  
**OFFICE AND INVOICE MANAGER** Susan Mathews  
**ROAD WARRIOR** Zeb Sadiq, David Beard

**CONTRIBUTING EDITORS**  
Clifford Atiyeh, Csaba Csere,  
Fred M.H. Gregory, John Pearley Huffman,  
Davey G. Johnson, Peter Manso, Bruce McCall,  
P.J. O'Rourke, Tony Swan, James Tate,  
Kevin A. Wilson, Dweezil Zappa

**CONTRIBUTING ARTISTS**  
Mark Bramley, Bryan Christie Design,  
Jim Fets, Robert Kerian, Aaron Kiley,  
James Lipman, Charlie Magee, Sean McCabe,  
Chris Philpot, Roy Ritchie, John Roe,  
Michael Simari

**EDITORIAL OFFICE** 1585 Eisenhower Place, Ann Arbor, Michigan 48108**PUBLISHED BY HEARST COMMUNICATIONS, INC.**  
**PRINTED IN THE U.S.A.**

**EDITORIAL CONTRIBUTIONS** Unsolicited artwork and manuscripts are not accepted, and publisher assumes no responsibility for return or safety of unsolicited artwork, photographs, or manuscripts. Query letters may be addressed to the deputy editor.

The aesthetics just make me want to close the magazine. Sorry, I know it's harsh, but I won't be able to renew my subscription if this keeps up.

**RICHARD TOMA**

EDMONTON, ALBERTA

*Okay, noted, but have you checked your carbon-monoxide detector recently?—Ed.*

Wow. Lists are usually nothing more than mildly entertaining late-night TV fodder, or in your case a mildly entertaining way to fill the start-of-the-year issue when not much automotive is going on. Boy, was I wrong. The way you did 10Best this year

was a great change—very informative and interesting. Well done!

**BOB CANORRO**

EAST SYRACUSE, NEW YORK

**POTENT QUOTABLES**

To better appreciate Mercedes-AMG's C63 S ["Candidates for the Rework Lot," January 2016], will C/D be publishing a review of John's experiences with "fat hookers"?

**E. McDONALD**

PLAINFIELD, VERMONT

I'm curious if Davey G. Johnson could be serious for a moment and explain exactly what he means when he comments that the Chevrolet Corvette Stingray "goes like stink, but stinks like plastic." I was under the impression that the Corvette interior has come a long way. He can't be referring to the car's performance!

**JEFF PORRELLO**

GREEN VALLEY, ARIZONA

*It's not a dig on the interior design or quality. He means it literally smells like plastic when you're sitting in the car—Ed.*

**ACK, ACK, ACURA**

According to Aaron Robinson, the 2017 Acura NSX ["Mathlete," January 2016] has a nine-speed gearbox like the Porsche 918 Spyder, buttresses like the new Ford GT, flush grab-sticks like an Aston Martin, almost the same meats as the Porsche 911 GT3, and the brain of a

coxswain on a rowing team. Is there anything Honda-ish about the NSX? Oh, there it is...a cluster of what looks like Honda Fit exhaust pipes.

JOHN CASSIDY  
POUGHKEEPSIE, NEW YORK

Having owned both a 2000 and a 2003 model-year NSX, and after reading about the new "NSX" in the January issue, it's very apparent to me that this car is an NSX in name only. Honda needs to ditch the battery pack, drop 600 pounds, intensify the use of carbon-fiber composite throughout the chassis, add an actual VTEC head to the engine—along with titanium connecting rods, which it avoided in an obvious cost-saving measure—increase the redline to 8500 rpm, and sell the car for \$99K. Remove the Acura Power Rangers-style grille and people would be lining up at dealerships to buy one. Acura used to stand for engines like the iconic C32B, C30A, B18C—legendary designs with engineering oversight from Formula 1 veterans. Now it just tries to sell bloated cars with dated designs that generate less excitement than Lawrence Welk songs at a high-school prom.

PETE MITCHELL  
SAN DIEGO, CALIFORNIA

#### FAULTY TOWERS

Daniel Pund's comparison of the BMW X6 M and Mercedes-AMG GLE63 S coupe ["The Tale of the Two Towers," January 2016] adroitly juggles bitterly satirical commentary with appropriately absurd metaphors. *Car and Driver* is again becoming a ripping meditation on human folly. Never change.

PATRICK HARVILL  
RIVERSIDE, CALIFORNIA

#### UP IN SMOKE

Eddie Alterman's statement in his Editor's Letter in the January 2016 issue was sooo funny! I had a great laugh upon reading "the sweet spot between the country-clubbing C300 and the seal-clubbing C63." Thank you, I enjoyed reading that very much.

CLEVELAND NORTON JR.  
SAN DIEGO, CALIFORNIA

The Bongtoke GLT is an excellent vehicle and would have smoked any of the cars on your 10Best list if you hadn't weeded it out right at the start. The only reason you

# NEW PERSPECTIVE

## ON THE ALL-NEW 2016 CHEVY MALIBU

Technology today is definitely a big, big win. Not so long ago, 1.5 liters was unheard of in a midsize car. But it works really nicely in the 2016 Malibu. With 163hp on tap, the Malibu has more than enough punch to navigate traffic. Push the go-pedal down and there's even a bit of shove in the driver's seat.

The six-speed automatic has nicely spaced gears, keeping the light little motor in the powerband and on boost as the revs climb, fall, and climb again as the speed increases. 1.5 liters might be small, but it's mighty.

That lightness pays off in the car's balance and handling. At nearly 300 pounds lighter than its predecessor, the Malibu sports a newfound agility. Turn-in is sharp and precise, and once you're deep in the turn, it maintains a neutral balance with surprisingly little understeer. The car stays planted and predictable, calmly arcing through the turn with impressive momentum.

As the wheel straightens out I notice that the wiper and turn-signal stalks are situated precisely at 10 and 2, encouraging proper hand

placement on the wheel. A small but thoughtful detail that supports attentive driving.

The sun climbs over the mountain range and its light bounces off the Pacific Ocean, sparkly and sultry. I pull over at the next overlook. Selfie time.

On the exterior, the Malibu is dressed in stylish duds, skipping the drama and going for a more grown-up look. Most new cars have gaping grilles that look like angry, hungry sea creatures. But the Malibu's design is clean and elegant, trading aggression for assertion. There's an eager sophistication to be found in the front end, as if it's looking forward to the drive rather than wanting to devour everything in its path.

What technology taketh away, technology also giveth in the form of a powerful engine and impressive handling. As I hop back in the Malibu and head back down the hill to civilization, I marvel at what has been accomplished. Here's a midsize car that loves to be driven.

TURN-IN IS  
SHARP AND  
PRECISE, AND  
ONCE YOU'RE  
DEEP IN THE TURN,  
IT MAINTAINS  
A NEUTRAL  
BALANCE



# THE FULL PERSPECTIVE

## ENTHUSIASTS CAN FEEL CONFIDENT RECOMMENDING THE 2016 CHEVY MALIBU. HERE ARE A FEW REASONS:

When Chevrolet designed the Malibu for 2016, changes went well beyond cosmetic. From a new lineup of engines to a wealth of available options, this is a car that welcomes driver involvement. And although "fun to drive" can mean different things to different people, they're all based on the same fundamentals. It's an integrated combination of elements that inspire confidence behind the wheel in every direction. And offering an EPA-estimated 37 MPG highway for the 1.5 turbo and up to a GM-estimated 48 MPG city<sup>1</sup> for the Hybrid, those fun drives can last even longer.

Of course, only one person can drive at a time, so for those long road trips with friends or kids, the available built-in 4G LTE<sup>2</sup> delivers sweet, sweet internet for passengers to a total of 7 devices at once.

Malibu also offers features to put even more eyes on the road to help the driver. Lane Keep Assist gives a heads-up if the car starts to drift and can even guide you back into the lane. Rear Cross Traffic Alert helps to keep an eye out for things behind you. And in the event you encounter a driver far less enthusiastic, Forward Collision Alert can sound off if things get too close for comfort up ahead. Safety features are no substitute for the driver's responsibility to operate the vehicle in a safe manner. The driver should remain attentive to traffic, surroundings and road conditions at all times. Read the vehicle's owner's manual for more important safety information.

One of the key tech highlights is the availability of Android Auto and Apple CarPlay<sup>3</sup> compatibility, opening up a whole new world of connectivity right from the dashboard. Music, maps, and texts are all available so you can fire up a playlist, chart a course, and tell everyone you'll be back later.

WHILE "FUN TO DRIVE" CAN MEAN DIFFERENT THINGS TO DIFFERENT PEOPLE, THEY'RE ALL BASED ON THE SAME FUNDAMENTALS. IT'S AN INTEGRATED COMBINATION OF ELEMENTS THAT INSPIRE CONFIDENCE BEHIND THE WHEEL IN EVERY DIRECTION.



1. Based on GM testing. Official EPA estimates not yet available. 2. Requires a compatible mobile device, active OnStar service and data plan. 4G LTE service available in select markets. Visit onstar.com for coverage map, details and system limitations. 3. Vehicle user interface is a product of Apple or Google and its terms and privacy statements apply. Requires compatible smartphone and data plan rates apply. Apple CarPlay is a trademark of Apple Inc. iPhone is a trademark of Apple Inc., registered in the U.S. and other countries. Android Auto is not currently available on 2016 Malibu with optional 8-inch diagonal MyLink display. 4. Always use safety belts and child restraints. Children are safer when properly secured in a rear seat in the appropriate child restraint. See the Owner's Manual for more information. 5. EPA-estimated MPG city/highway 27/37 on 1.5L and GM-estimated MPG city/highway 45/48 on Malibu Hybrid. 6. Visit onstar.com for coverage map, details and system limitations. Services vary by model and conditions. 7. Requires Chevrolet MyLink with 8-inch diagonal display.



### 10 AIR BAGS ▾

Malibu elevates safety to a whole new level with 360-degree sensors that measure the severity of the impact and adjust the inflation of the airbags<sup>4</sup>.

### EFFICIENT POWER

Make every mile count. Two brand-new engines provide exceptional fuel efficiency<sup>5</sup> as well as impressive power, while active grill shutters route the air with aerodynamic finesse.

Malibu is the first midsized car with available built-in 4G LTE<sup>2</sup>, delivering high-speed internet over Wi-Fi with the ability to connect up to seven devices at once.

### BUILT-IN 4G LTE

### IT'S A LOOKER

Form meets function with sophisticated, tailored styling. The exterior sheetmetal sports crisp, sharp lines, while the interior offers clever design and thoughtful touches.

## PROTECTION FROM EVERY ANGLE

- A high-strength **steel safety cage increases structural integrity** to provide impressive protection in the event of an impact.

- Malibu can instantly contact available **OnStar<sup>6</sup> to transmit essential information**, such as airbag deployment and precise location info using GPS technology.

- Available **Lane Keep Assist** warns you when you're unintentionally drifting from your lane, and can even gently guide you back between the markers.

- Available **Teen Driver<sup>7</sup> technology** mutes audio when seatbelts aren't worn and gives audible and visual warnings when the Malibu is traveling over predetermined speeds.

# FACTORY FIVE RACING

A Factory Five Type 65 Coupe driven by Corey Bligh for SoFast Racing broke the land speed world record for Class C Blown Fuel Modified Sports at 216.9 MPH on the Bonneville Salt Flats. "This ain't no kit car!"



Factory Five Engineer Jim Schenck testing the Coupe at the Bondurant School of High Performance Driving.

If you've always wanted to build your own car, start with the world's best selling, best performing, and best engineered component cars from the great people at Factory Five.



Free brochure & DVD!

[www.factoryfive.com](http://www.factoryfive.com)

508-291-3443



Made in USA



wouldn't consider it is because it only comes in green. And because, oh forget it. I have to take a nap.

DAVE LESACK

KELOWNA, BRITISH COLUMBIA

*It's high time it got noticed, bud—Ed.*

## ALFA BITS

The Alfa Romeo 4C is an experience, a throwback, and yet a renaissance spitting in the eye of BMWs and other sporty and blah "driver's cars" [ "We Sometimes Disagree," January 2016 ]. It is the Harley-Davidson of the car world. I bonded with John Phillips for the first time after reading his column. He is a thinker and the brightest automotive columnist I have ever read.

PHILIP CARAVELLA

ST. AUGUSTINE, FLORIDA

I am always entertained by John Phillips's writings. You should keep him around.

CAMERON KORZ

SOUTH JERSEY, NEW JERSEY

*We keep him on a preserve in Montana—Ed.*

## EMAILS FROM THE EDGE

In the latest issue you ran three letters from Seattle [ Backfires, January 2016 ]. Here is another one.

RICHARD POTTER

SEATTLE, WASHINGTON

How do I submit a Backfire to Ed?  
Thanks!

KEVIN MANGOLD

HUNTLEY, ILLINOIS

*It's easier than you think—Ed.*

**SUBSCRIPTION SERVICE** For fast and convenient subscription service, visit [service.caranddriver.com](http://service.caranddriver.com) to order a print subscription, pay your bill, renew your subscription, give a gift subscription, update your mailing and email addresses, and more! Or write to **Customer Service Department, Car and Driver**, P.O. Box 37870, Boone, IA 50037; or call toll-free: 800-289-9464.

**PERMISSIONS** Material in this publication may not be reproduced in any form without permission. **REPRINTS** For information on reprints and e-prints, please contact Brian Kolb at **Wright's Reprints**, 877-652-5295 or [bkolb@wrightsreprints.com](mailto:bkolb@wrightsreprints.com). **BACK ISSUES** To order back issues dated within the past two years, please go to [backissues.caranddriver.com](http://backissues.caranddriver.com). For digital back issues, please go to [www.zinio.com/cd-issues](http://www.zinio.com/cd-issues). **Car and Driver** © is a registered trademark of Hearst Communications, Inc. • Copyright 2016, Hearst Communications, Inc. All rights reserved.

# CAR AND DRIVER

PUBLISHER AND

CHIEF REVENUE OFFICER

Felix DiFilippo

ASSOCIATE PUBLISHER Jason Nikic  
EXECUTIVE DIRECTOR, GROUP MARKETING Lisa Boyars  
EXECUTIVE DIRECTOR, DIGITAL ADVERTISING SALES  
Deirdre Daly-Markowski

## New York

EAST COAST AUTOMOTIVE DIRECTOR Cameron Albergo  
INTEGRATED SALES MANAGER Samantha Rady  
EAST COAST DIGITAL SALES MANAGER Brett Pickler  
ASSISTANT Vincent Carbone

## Chicago

INTEGRATED SALES DIRECTOR Rick Bisbee  
INTEGRATED SALES MANAGER Paul Fruin  
ASSISTANT Yvonne Villareal

## Detroit

INTEGRATED SALES DIRECTOR Mark Fikany  
ASSISTANT Toni Starrs

## Los Angeles

INTEGRATED SALES DIRECTOR Anne Rethmeyer  
INTEGRATION ASSOCIATE Michelle Nelson

## San Francisco

MEDIACENTRIC, INC. Steve Thompson, William G. Smith

## Dallas

PR 4.0 MEDIA Patty Rudolph

## Hearst Direct Media

SALES MANAGER Brad Gettelfinger  
ACCOUNT MANAGER John Stankewitz

## MARKETING SOLUTIONS

SENIOR MARKETING DIRECTOR Jason Graham  
ASSOCIATE MARKETING DIRECTORS  
Amanda Luginbill, Cameron Kiersch  
MARKETING MANAGER Michael Coopersmith  
ASSOCIATE INTEGRATED MARKETING MANAGER Holly Mascaro  
INTEGRATED MARKETING COORDINATOR Scott Topel  
GROUP DIGITAL MARKETING DIRECTOR Kelley Gudahl  
DIGITAL MARKETING MANAGER Anthony Fairall

## CREATIVE SOLUTIONS

EXECUTIVE CREATIVE DIRECTOR, GROUP MARKETING  
Jane Nesbitt Gale  
ART DIRECTORS Elena Martorano, Michael B. Sarpy

## ADMINISTRATION

ADVERTISING SERVICES DIRECTOR Regina Wall  
ADVERTISING SERVICES COORDINATOR Rebecca Taroon  
ASSISTANT TO THE PUBLISHER Jeanette Silverstein

## PRODUCTION

GROUP PRODUCTION DIRECTOR Chuck Lodato  
GROUP PRODUCTION MANAGER Lynn Onoyoro Scaglione  
PREMEDIA MANAGER Frank Linz

## CIRCULATION

CONSUMER MARKETING DIRECTOR William Carter

## HEARST MEN'S GROUP

SENIOR VICE PRESIDENT AND GROUP PUBLISHING DIRECTOR  
Jack Essig

ASSOCIATE PUBLISHER AND GROUP MARKETING DIRECTOR  
Jill Meenaghan

## GENERAL MANAGER

Samantha Irwin

EXECUTIVE DIRECTOR, GROUP STRATEGY AND DEVELOPMENT  
Dawn Sheggeby

## SENIOR FINANCIAL ANALYST

Naiobe Mayo

## PUBLISHED BY HEARST COMMUNICATIONS, INC.

PRESIDENT & CHIEF EXECUTIVE OFFICER  
Steven R. Swartz

## CHAIRMAN

William R.

Hearst III

## EXECUTIVE VICE CHAIRMAN

Frank A.

Bennack, Jr.

## HEARST MAGAZINES DIVISION

PRESIDENT David Carey  
PRESIDENT, MARKETING & PUBLISHING DIRECTOR  
Michael A. Clinton

EDITORIAL DIRECTOR Ellen Levine

PUBLISHING CONSULTANTS Gilbert C. Maurer,  
Mark F. Miller



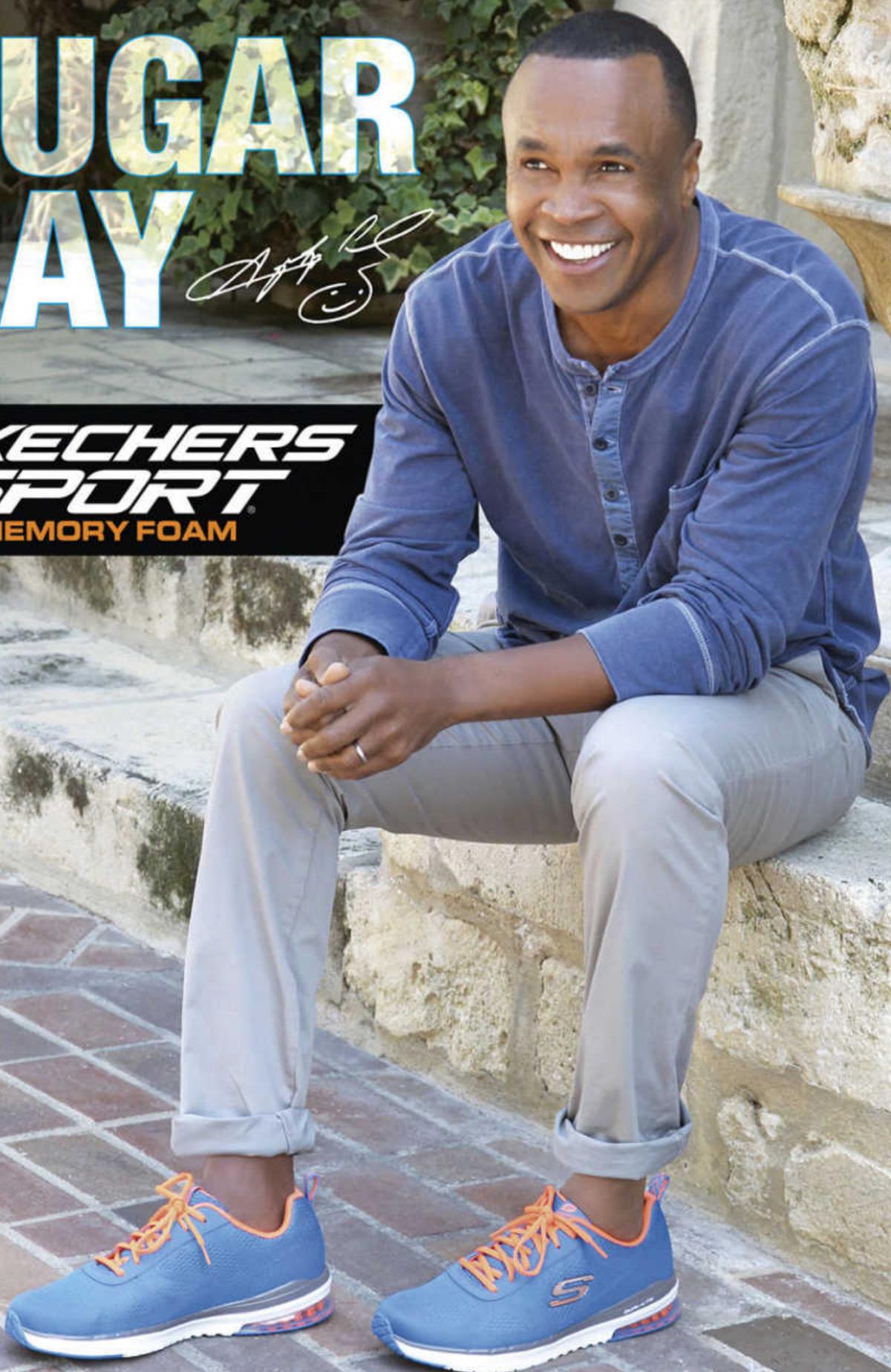
Using Shell V-Power NITRO® + Premium Gasolines and diesel fuels appropriately in all Car and Driver test vehicles ensures the consistency and integrity of our instrumented testing procedures and numbers, both in the magazine and online.



# SUGAR RAY



**SKECHERS**  
**SPORT**  
WITH **MEMORY FOAM**





## Intelligence is the new rock and roll. This is the power chord.

Today, more than ever, intelligence is taking center stage. So we designed the all-new Audi A4 to steal the show. The available, fully digital virtual cockpit puts Google Earth™ navigation square in your sight. It also delivers cutting-edge technology like available traffic jam assist\* that senses and adapts to help conquer your commute. This is intelligence with a whole new attitude.

The powerfully intelligent, all-new Audi A4.



# upfront

□ edited by JARED GALL

## ★ ¿HABLA ESPAÑOL?

**AVISTAR** — The verb “avistar” means “to catch sight of” or “to glimpse” in Spanish. Americans know it as part of the Terminator’s sendoff for T-1000. Depending on context, “hasta la vista” can either mean “bye” or “until we meet again.”



## . REVEAL OF THE MONTH

# Hasta Avista

**BUICK'S DETROIT-SHOW CONCEPT FACES JUDGMENT DAY.**  
by Jared Gall

IT'S THE RARE auto executive who is content with sales figures. But Duncan Aldred, the head of Buick and GMC, seems comfortable, if not complacent. Buick set its third straight global record in 2015, with more than 1.2 million sales. It plans to launch seven new products by 2018, with the compact Envision crossover and Cascada convertible set to go on sale imminently [see page 085 for our Cascada first drive].

“People forget,” Aldred says, “that we outsell Audi in the U.S. We outsell Infiniti and Acura. We outsell Lincoln.”

Indeed, Buick beat Cadillac by nearly 50,000 sales last year. It's the fourth-bestselling premium brand in the U.S. (You might not consider Buick a premium brand, but GM's accountants most certainly do.) And Buick achieved that mark with just five vehicles in its lineup, a wee fraction of the number BMW, Mercedes, and Lexus deploy to take the top three spots. With the Envision ideally placed to take a big bite out of the 122,000-unit gap between Buick and third-place Lexus, Aldred says his brand “has earned a halo car.” The Avista concept could be it.



METALLIC POWDER-BLUE BRAKE CALIPERS NICELY COMPLEMENT THE BUICK'S DEEP-BLUE BODY.

GM design chief Ed Welburn likens the Avista to the original Riviera, a competent but relaxed coupe.



WE SUGGEST BUICK MAKE IT  
A SHOOTING BRAKE AND  
JOIN THE FERRARI FF IN  
THE CLOWN-SHOE CLASS.



THE CARBON FIBER ON  
THE FRONT AND REAR  
VALANCES GETS ITS  
SILVERY LUSTER FROM A  
WEAVE OF TITANIUM.

#### ■ PLATFORM

Never mind that Buick's lineup is composed exclusively of front- and four-wheel-drive models; the Avista sends its power to the rear axle. Company representatives tell us that, as a concept, the Avista isn't built on a particular platform. But they must want us to know they're lying, because they also tell us it has a 110.7-inch wheelbase. Its front-track width is 63.0 inches; the rear, 62.9. Those stats exactly describe the Chevy Camaro SS. So it's not hard to guess where a production Avista might dig up its bones. On the concept, 20-inch wheels hide massive carbon-ceramic discs at all four corners and are wrapped in 285/30 Pirelli P Zeros up front and 305/30s in the rear. And since the Camaro SS offers magneto-rheological shocks, the Avista has them, too, though their tuning would certainly be tweaked for a Buick.

#### ■ POWERTRAIN

Buick does not want anyone comparing the Avista with its last rear-drive coupe, the 300-hp GNX of 1987. But like the GNX, the Avista is powered by a turbocharged V-6. This one's more modern and powerful, though. Borrowed from the Cadillac CT6, the twin-turbo DOHC 3.0-liter has cylinder deactivation and makes 400 horsepower. We were standing nearby when it was fired up to drive onto the show stand, and we can assure you that it sounds mean. The CT6's eight-speed automatic sends the torque aft.



#### ■ STYLING

GM design boss Ed Welburn says the Avista's sheetmetal "really shows how important proportions are." It's an exceptionally clean and uncluttered design, with a low nose, short overhangs, and a rear window so gently sloped that it nearly makes the car a hatchback. That long backlight, along with the airy, B-pillarless greenhouse,

pulls the visual weight of the Avista rearward, emphasizing the driven wheels.

Even if the Avista never sees production, expect certain elements, such as the inverted-swoosh head- and taillights, to influence upcoming Buicks. And notice the Avista's tri-shield insignia. It, along with the one on the 2017 LaCrosse, returns the badge to its red-silver-and-blue past.

AS FAR AS CONCEPTS GO, THE AVISTA IS FIRMLY GROUNDED IN REALITY. THE B-PILLARLESS ROOF IS THE MOST FAR-FETCHED ASPECT OF THE DESIGN, BUT IF MERCEDES-BENZ AND BENTLEY CAN DO IT, SURELY BUICK COULD, TOO.



#### ■ INTERIOR

Inside, a full-length center console that flows from the dash to the rear seats splits the four-passenger seating arrangement. The touchscreen instrument panel and center stack establish a high-tech vibe that is amplified by carbon fiber and satin-finish aluminum. The small-diameter, squared-off steering wheel is the most overtly sporty detail on the car. But in defiance of the performance-car trend of cramming ever more functions onto the wheel, this one has just three buttons: two turn-signal indicators and one marked "sport." Stuff that you can't see (and therefore doesn't need to be real) includes advanced noise-canceling technology, ionic air purification, and aromatherapy.

#### ■ PROSPECTS

Both Aldred and Welburn stress that the Avista is the brainchild of the design team, not a response to management calling for production-car proposals. So it sounds as if the prospect for it to reach production is dim. But Aldred is firm in his assertion that Buick is ready for a halo car. "We can do anything. We have the capability, we have the funds, and we can make the business case," he says. His volume boxes are checked: Buick's lineup now contains one compact and two mid-size sedans, as well as three stepping-stone crossovers. Aldred calls the Cascada the brand's current halo, but says such flagships are a "flash in the pan by nature." Will the next be Camaro-based? We hope so, and we get the sense that the boss man does, too.

# WeatherTech®

Automotive Accessories



**SPORTS CAR RACING  
DONE RIGHT!**

Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!



At WeatherTech®, we take  
endurance racing as seriously as  
we take automotive accessories.

Order Now: **800-441-6287**



American Customers  
**WeatherTech.com**



Canadian Customers  
**WeatherTech.ca**



European Customers  
**WeatherTechEurope.com**

© 2016 by MacNeil IP LLC

Domestic dogs' brains are hard-wired to bond with their owners. Levels of the feel-good hormone oxytocin rise in both human and pooch when maintaining eye contact.

# Sit, Stay, Corner

WE ASK THE EXPERTS: WHY DO DOGS LOVE CARS?

by John Pearley Huffman



ALABAMA, THIS AUTHOR'S HUSKY, will jump into a truck bed before the tailgate is even down. Another staffer's Newfie dances around as if her paws were in a frying pan and runs in circles when she hears the word "ride." Only dogs seem to love cars as much as humans. There's little (or no) science investigating why, so we invited the experts to speculate.

Dogs experience the world more through scent than sight. Where a human's nose has up to 5 million olfactory receptors, a dog's can have up to 300 million. No wonder they like to stick their snouts out the window and into the wind. "I'm not sure they're getting a high, per se," says Dr. Melissa Bain, a veterinarian at the University of California, Davis, who researches animal behavior and welfare. "But they are getting a lot of input at higher speed."

Dr. Brian Hare, associate professor of evolutionary anthropology at Duke University and the founder of the Duke

Canine Cognition Center, says the wind blast may be a sort of sensory overload. "It's the equivalent of watching an incredible movie or reading the latest issue of *Car and Driver*," he says (with a little coaching). "There's so much information they're taking in, it's just 'Whoa.' Then again, the simpler explanation could be that it just feels good. And it could also be both."

The breeze is just part of it, he says. "In most places where you find wolves today, they have to range pretty far. They've evolved to go places. They likely enjoy going places. It's not going to do much good if you're selected to not enjoy that thing you need to do to survive." Hare says it's possible dogs know the car is going somewhere, "a new place to explore, and there might be other dogs there." At the very least, he says, "dogs associate the car with a good outcome: 'When I get in this thing, good things happen.' At the most they understand that they're going somewhere." Of course, not all dogs are the same, and our dogs would add: "Yeah, sure, doc, but what happened to my balls?"

Most of all, he says, dogs are pack animals, social animals. But domestication has tweaked the formula. "If you give dogs a choice between being with a person or with other dogs, dogs prefer to be with people," Hare says. "They're the most suc-

cessful mammals besides humans in the history of the planet," he continues. "The trust bond with humans has been a huge boon to the domesticated wolves who live with us. Dogs have evolved to be geniuses at taking advantage of the human tool." It's dogs' desire to be with us that makes them eager driving companions. "My guess is that they wouldn't necessarily enjoy riding in an autonomous car," says Hare. In other words, dogs love cars because they love us. There's no accounting for taste.

★ SCOOBY DOS AND DON'TS

## PET SMART

Not all dogs love riding in cars, and UC Davis's Dr. Bain advises not forcing rides on them. During long trips, she suggests considering an anti-nausea drug for dogs, though they can have a sedating effect. Also, like human beings, dogs are safest in a carrier or belted in. If your dog likes to stick his head out a window (as hers does), she suggests using the child-safety lockout to make sure he won't operate the window while stepping on a switch. Finally, things can get in dogs' eyes, so she recommends goggles for dogs, such as Doggles (shop.doggles.com).





**CIVIC**

# 2016 NORTH AMERICAN CAR OF THE YEAR



**HONDA**

**Your dreams drive us.**

This milestone of success belongs to you as much as it belongs to us. The all-new Civic has been named 2016 North American Car of the Year, and you are the inspiration behind this achievement.

Civic Touring Sedan shown. ©2016 American Honda Motor Co., Inc.

THE STEEPER,  
THE CHEAPER

LARGER POWER GAINS AND  
SMALLER PRICE PREMIUMS BOTH  
INCREASE THE SLOPE IN OUR  
CHART. SO THE BEST VALUES  
ARE REPRESENTED BY THE  
STEEPEST LINES.

HORSEPOWER

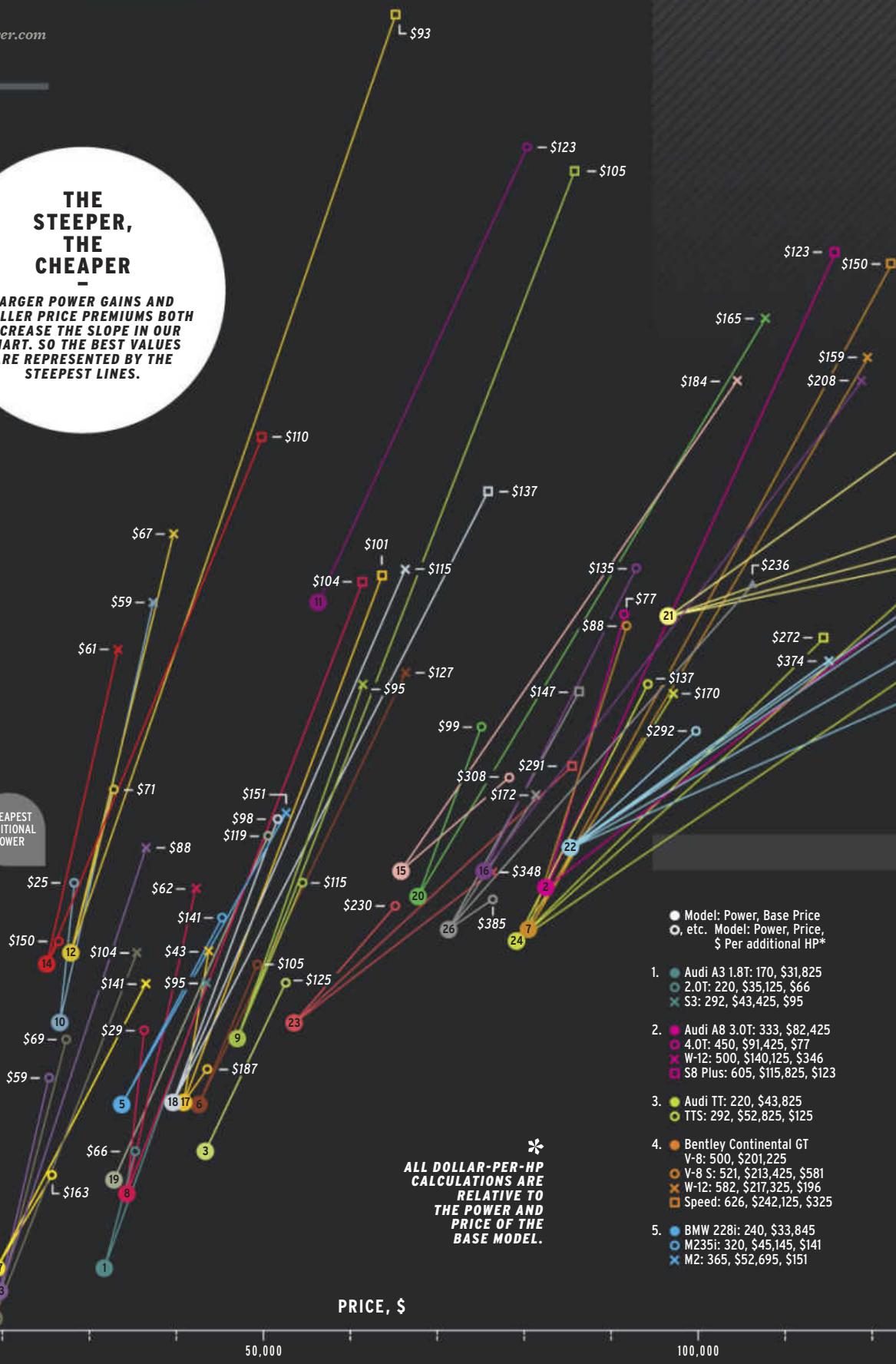
700  
600  
500  
400  
300  
200  
100  
0

CHEAPEST  
ADDITIONAL POWER

PRICE, \$

ALL DOLLAR-PER-HP  
CALCULATIONS ARE  
RELATIVE TO  
THE POWER AND  
PRICE OF THE  
BASE MODEL.

- Model: Power, Base Price, etc. ○ Model: Power, Price, \$ Per additional HP\*
- 1. Audi A3 1.8T: 170, \$31,825  
2.0T: 220, \$35,125, \$66  
S3: 292, \$43,425, \$95
- 2. Audi A8 3.0T: 333, \$82,425  
4.0T: 450, \$91,425, \$77  
W-12: 500, \$140,125, \$346  
S8 Plus: 605, \$115,825, \$123
- 3. Audi TT: 220, \$43,825  
TTS: 292, \$52,825, \$125
- 4. Bentley Continental GT  
V-8: 500, \$201,225  
V-8 S: 521, \$213,425, \$581  
W-12: 582, \$217,325, \$196  
Speed: 626, \$242,125, \$325
- 5. BMW 228i: 240, \$33,845  
M235i: 320, \$45,145, \$141  
M2: 365, \$52,695, \$151



# The Price of Power

# MAPPING OUT WHO GIVES YOU THE MOST OPTIONAL PONIES PER DOLLAR. *by Jared Gall*



“ALWAYS GET THE BIG ENGINE” your grandpa used to say, typically while unwrapping a Werther’s Original candy and shouting at *The Price is Right* as it gave away yet another economy model. But in these days of 300-hp four-bangers, is there still value in choosing the bigger engine? ¶ Certainly the answer depends on the car and the carmaker. And so we busied ourselves with the infographic adjacent, an overview of which automaker’s optional horsepower is the cheapest. ¶ We began by compiling the prices and outputs of a selection of available performance vehicles. In the interest of simplifying what is still not a simple data set, we counted only trim levels and optional engines, ignoring performance-enhancing exhausts and other stand-alone power bumps. Then we minimized redundancies whenever two or more body styles share a common platform and engine and, still faced with more cars than we could fit on these pages, pared our list to the cars we consider the most interesting. So the next time you feel the urge to shout at the television, you’ll be armed with real data.

6. ● **BMW 428i**: 240, \$42,845  
 ○ 435i: 300, \$49,145, \$105  
 ✕ M4: 425, \$66,395, \$127

7. ● **BMW Gran Coupe 640i**: 315, \$80,495  
 ○ 650i: 445, \$91,895, \$88  
 ✕ M6: 560, \$119,495, \$159  
 □ Alpina B6: 600, \$123,195, \$150

8. ● **Cadillac ATS 2.5**: 202, \$34,210  
 ○ 2.0 Turbo: 272, \$36,240, \$29  
 ✕ 3.6: 333, \$42,335, \$62  
 □ ATS-V: 464, \$61,460, \$104

9. ● **Cadillac CTS 2.0 Turbo**: 268, \$47,050  
 ○ 3.6: 335, \$54,775, \$115  
 ✕ Vsport: 420, \$61,445, \$95  
 □ CTS-V: 640, \$85,990, \$105

10. ● **Chevrolet Camaro 2.0 Turbo**: 275, \$26,695  
 ○ V-6: 335, \$28,190, \$25  
 ✕ SS: 455, \$37,295, \$59

11. ● **Chevrolet Corvette Stingray**: 455, \$56,395  
 ○ Z06: 650, \$80,395, \$123

12. ● **Dodge Challenger SXT**: 305, \$27,990  
 ○ R/T: 375, \$32,990, \$71  
 ✕ Scat Pack: 485, \$39,990, \$67  
 □ SRT Hellcat: 707, \$65,190, \$93

13. ● **Ford Focus 2.0-liter**: 160, \$19,890  
 ○ ST: 252, \$25,300, \$59  
 ✕ RS: 350, \$36,605, \$88

14. ● **Ford Mustang V-6**: 300, \$25,045  
 ○ EcoBoost: 310, \$26,545, \$150  
 ✕ GT: 435, \$33,295, \$61  
 □ GT350: 526, \$49,995, \$110

15. ● **Jaguar F-type**: 340, \$65,995  
 ○ F-type S: 380, \$78,295, \$308  
 ✕ F-type R: 550, \$104,595, \$184

16. ● **Jaguar XJ**: 340, \$75,395  
 ○ Supercharged: 470, \$92,995, \$135  
 ✕ XJR: 550, \$118,995, \$208

17. ● **Lexus RC200t**: 241, \$40,935  
 ○ RC300: 255, \$43,550, \$187  
 ✕ RC350: 306, \$43,720, \$43  
 □ RC F: 467, \$63,745, \$101

18. ● **Mercedes-Benz C300**: 241, \$39,875  
 ○ C450 AMG: 362, \$51,725, \$98  
 ✕ AMG C63: 469, \$66,175, \$115  
 □ AMG C63 S: 503, \$75,875, \$137

19. ● **Mercedes-Benz CLA250**: 208, \$32,975  
 ○ CLA45 AMG: 355, \$50,425, \$119

20. ● **Mercedes-Benz CLS400**: 329, \$67,825  
 ○ CLS550: 402, \$75,025, \$99  
 ✕ AMG CLS63 S: 577, \$108,725, \$165

21. ● **Mercedes-Benz S550**: 449, \$96,575  
 ○ S600: 523, \$171,675, \$1015  
 ✕ Maybach S600: 523, \$191,975, \$1289  
 □ AMG S63: 577, \$144,175, \$372  
 ▲ AMG S65: 621, \$227,275, \$760

22. ● **Porsche 911 Carrera**: 350, \$85,295  
 ○ S: 400, \$99,895, \$292  
 ✕ GTS: 430, \$115,195, \$374  
 □ GT3: 475, \$132,395, \$377  
 ▲ GT3 RS: 500, \$176,995, \$611  
 ✕ Turbo: 520, \$152,095, \$393  
 □ Turbo S: 560, \$183,695, \$469

23. ● **Porsche Cayman**: 275, \$53,595  
 ○ S: 325, \$65,095, \$230  
 ✕ GT: 340, \$76,195, \$348  
 □ GT4: 385, \$85,595, \$291

24. ● **Porsche Panamera V-6**: 310, \$79,095  
 ○ S: 420, \$94,195, \$137  
 ✕ S E-hybrid: 416, \$97,095, \$170  
 □ GT: 440, \$114,395, \$272  
 ▲ Turbo: 520, \$142,295, \$301  
 ★ Turbo S: 570, \$181,295, \$393

25. ● **Subaru Impreza**: 148, \$19,090  
 ○ WRX: 268, \$27,390, \$69  
 ✕ WRX STI: 305, \$35,490, \$104

26. ● **Tesla Model S 70**: 315, \$71,200  
 ○ 70D: 328, \$76,200, \$385  
 ✕ 85: 373, \$81,200, \$172  
 □ 85D: 417, \$86,200, \$147  
 ▲ P85D: 463, \$106,200, \$236

27. ● **Volkswagen Golf TSI**: 170, \$19,315  
 ○ GTI: 210, \$25,815, \$163  
 ✕ Golf R: 292, \$36,470, \$141

# This Is Not a Made-Up Number\*

A LOOK INTO ADVISORY CORNERING SPEEDS. *by Eric Tingwall*

**POP QUIZ:** The yellow diamond-shaped sign on the side of the road says you should take the upcoming curve at 35 mph. At what speed can you actually travel through the bend? 45 mph? 55? Can you double it?

Depends on the car, right? It's no surprise that the suggested speeds through curves fall well below what the average BMW can manage. Traffic engineers design for trucks, inclement road conditions, inept drivers, and ambulance-chasing lawyers, not P Zero-shod sports coupes. But it also depends on the curve, and how reasonable that suggested speed actually is. We looked into how recommended cornering speeds are set, and we found a mishmash of malleable procedures

that are inconsistently applied. That's why a 45-mph curve in Happyland, Oklahoma, often looks nothing like a 45-mph bend on SoCal's Angeles Crest Highway. To no one's surprise, research indicates that these curve advisory speeds are among the most disregarded signs on the road.

Even as the Federal Highway Administration (FHWA) has formalized its procedures in recent years, there's still wide latitude for how state, county, and municipal agencies determine the curve advisory speeds on the roads they manage. The FHWA's 35-page guidance document, published in 2011, offers sanctioned methods that fall into the three following fundamental categories, but engineers aren't obligated to abide by them.

## Finally, Congress Gets Something Right. (Sort Of.)

In a fleeting moment of governmental competence, America's elected officials approved a five-year, \$305 billion road-funding plan this past December. The sensible, bipartisan action is known as the Fixing America's Surface Transportation (FAST) Act. No transportation bill in the past decade has covered more than two years.

The bulk of the FAST Act money—\$207 billion—will be distributed to states for road and bridge improvements, where the stability of a five-year plan could encourage local authorities to take on more ambitious, longer-term infrastructure programs. But it doesn't provide much headroom for growth. The Department of Transportation contends that the 11-percent increase in spending from 2016 through 2021, primarily intended to offset inflation, isn't enough to reduce congestion or keep pace with technology. The Obama administration had originally proposed a 45-percent increase.

As usual, finding the money that legislators have decided to spend remains a problem. Rising fuel efficiency means gas-tax revenues are falling and the Highway Trust Fund, which will pay for most of the FAST Act, already runs a deficit of \$16 billion per year. With oil currently at unimaginable lows, it's difficult to envision a better time to raise the gas tax or at the very least to index it to inflation. The current federal tax of 18.4 cents per gallon has been unchanged since 1993. The good news is that the FAST Act contains a provision to increase road funding in the unlikely event that our nation's legislators grow a spine between now and 2021. Any additional revenue brought in to the Highway Trust Fund will automatically be authorized for highway spending. —ET



\*Except when it is a made-up number.

#### ◆ DIRECT

While it's not common, highway planners are free to eyeball curves, drive through them, and set a conservative speed based on their seat-of-the-pants impressions. The FHWA would prefer that traffic agencies trust the driving public's instincts instead. On the list of approved procedures, engineers can measure free-flowing traffic as it travels through the curve without any signage. In 2003, the Manual of Uniform Traffic Control Devices—the traffic engineer's instruction manual—recommended setting curve advisories using the speed that 85 percent of vehicles do not exceed. The more modern FHWA manual backpedals, encouraging engineers to use the average speed of trucks, which typically correlates with the 40th percentile of passenger-car speeds.

**CARS THAT CAN BETTER A FULL 1.0 G ON THE SKIDPAD ARE BECOMING COMMON. THIS CORVETTE Z06 MANAGED 1.19 G'S, ABOUT FOUR TIMES A CURVE'S RECOMMENDED LATERAL ACCELERATION LIMIT.**



#### ◆ ACCELEROMETER

Another approach requires engineers to drive through the curve at 5-mph increments while tracking lateral acceleration. This technique was popularized in the 1950s with the ball-bank indicator, a sort of crude accelerometer, and it remains one of the favored methods. When a true accelerometer is used, the FHWA suggests a



$$S = \sqrt{\frac{15R(0.112 - 0.00066V + 0.000091V^2 + B/100)}{1 + 0.00136R}}$$

#### ◆ DESIGN

Traffic planners can also calculate recommended curve speeds based on the road's geometric parameters. This complex-looking formula does so based on fairly simple variables such as the radius of the curve, the banking of the pavement surface, and the speed of traffic as it approaches the bend.

**S = CURVE SPEED, MPH**  
**R = RADIUS OF CURVE, FEET**  
**V = AVERAGE TRUCK SPEED ON STRAIGHT LEADING INTO CURVE, MPH**  
**B = BANKING OF CURVE, PERCENT**

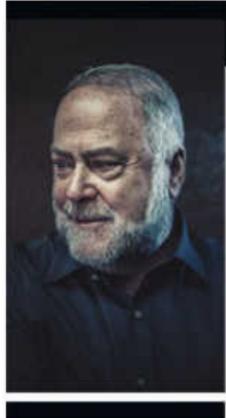
speed yielding between 0.26 and 0.30 g of lateral acceleration.

If that seems comically low in a world where even the most ungainly heavy-duty pickups manage more than double that grip, it's because the manual accounts for the fact that drivers typically exceed the recommended speed by 7 to 10 mph. The FHWA acknowledges that ambivalence to these advisory speeds is problematic. As drivers learn that they can disregard

curve-speed signs on their regular routes, they become desensitized to the yellow diamond-and-square duo wherever it appears. But in some jurisdictions, the numbers are grounded in reality. Despite the abundance of modern traffic data, much of the research on driver behavior and curve speeds dates to the 1960s, '70s, and '80s. If the research had kept pace with the technological advances of the car, maybe our signage would be relevant today.

# by John Phillips

THAT'S HOW THE MERCEDES BENDS.



I was reading U.S. motor-vehicle crash statistics on New Year's Day—because that's the kind of three-ring monkey-yammering festival of excitement my life has become—when I was floored by two facts. First, I had misplaced my drink, only to find it being consumed by my 18-pound cat, Teddy Roosevelt. Second, U.S. drivers crash approximately 5.6 million times per year. Given our population of 322 million, that means 1.7 percent of our number apparently require further eye-hand coordination or English-reading skills or cautionary tales about dwelling in O' Cleary's until last call, which is another way to lose your drink. Of course, I've known folks who crash multiple times per year—the Busch brothers, for instance, or any NFL player at all—which means that statisti-

cally fewer of us are actually devoted to driving 200 feet backward through a fruit stand on Boca Vista Boulevard. But, I mean, seriously folks, if 5.6 million of us crashed, say, our Easy Climber stair lifts, there'd be God's own Congressional hearing chaired by Clarence Ditlow and three Barbary apes.

What's more, the crashes were merely those reported to police, whereas most aren't. One estimate, in fact, suggests we may be crashing 16 million times per year, and possibly more if Justin Bieber rents another Lamborghini. Am I wrong, here, or should every body shop in America be creating a new class of billionaires? I stupidly studied drafting in high school, when I should have studied the 1001 miracle uses of Bondo, primer, and naked-lady calendars.

Anyway, all of this held me in its thrall, as they say, because I've met plenty of people who have never crashed a car—ever. My grandmother, for instance, and several of the early Popes. Also, me. That's right. I've never crashed a car on public roads. On racetracks, sure. Also on private property, where, for instance, while practicing 180s in the snow, I beelined my father's Toyota Corolla headfirst into a cement flower box in a parking lot at Ohio State University. Then, while closing our garage door, I allowed my 1970 Mustang Boss 302



► Phillips, shown here practicing defensive driving.

to roll down our steep driveway—with me watching raptly at a distance of 20 feet or so—and into my brother-in-law's VW Karmann Ghia. We never fixed the Corolla, and my sister divorced Ghia Boy, so I can tell you that neither mishap relieved me of a dime, which, of course, is a crime in the eyes of the cosmos, so I will set aside time tomorrow to feel bad about it.

Moreover, I've driven a lot—40,000 miles per year, I once calculated, for 47 years. I wore out our family cars, even as my mother gave me repeated finger-

wagging admonitions to "bundle your errands." Except, back then, I had no errands and no responsibilities except clinging vise-like to my father's Sunoco credit card.

Anyway, it's good not to be a crasher. For one thing, I've witnessed at least six C/D staffers who, after forcing physics into a standoff, have been shown the door faster than a wet dog, with someone boss-like pushing sharply from behind and shouting, "I hear there's an opening for a night manager at Old Country Buffet," followed by a slam that fractures the doorjamb. In fact, we had a kindly tech editor who crashed an Acura NSX, a Suzuki Swift GT, then a Lamborghini Diablo. After that final veil of tears, he told me his flight back from Italy "might have lasted 409 hours" and that he looked so broken-spirited upon landing in Detroit that the customs agent simply waved him through.

It helps that I've never owned a cell-phone. Well, my wife bought me one of those \$25 Nokia flippy-uppy jobs, but the only thing I ever used it for was to pound a stapler back into shape. That's lucky for me, because cellphones are now estimated to cause 26 percent of all crashes, which suggests we ought to toss the things into every vehicle owned by ISIS.

But let's get back to crash statistics, which are being used more and more often to rationalize autonomous cars, because

those cars don't drive drunk or engage in fits of mumbling road rage or try to out-lick a melting Dove Bar while speeding through construction zones. We—well, some of us—are celebrating the 50th anniversary of Ralph Nader's *Unsafe at Any Speed*, one of the 88 books that "shaped America," says our Library of Congress. I hope Nader is gratified to have witnessed mandated airbags, ABS, stability control, and, perhaps soon, laser-guided deer whistles. If there's an outstanding example of

Big Government intervening in the marketplace to the betterment of us all, those safety devices surely make the case.

So here's my own advancement for 2016: I'll accept autonomous cars—as if I have a choice—as long as the 5.6 million drivers who are so blasé about crashing are the first occupants and owners. Let them enjoy cars that don't so much go putt-putt as Google-Google. They are, in my mind, one-quarter of the Four Horsemen of the Apocalypse, the one named "Ed." We need to keep an eye on them. ■



# It's the ride that matters.

When the sun meets the horizon and there's nothing in front of you except the open road. That's the only way to live.

Get GEICO Motorcycle insurance today.

**GEICO** *Motorcycle*  
geico.com | 1-800-442-9253 | Local Office

THE TALE OF THE  
**2017 VOLT**

AS TOLD FROM AN ENGINEERING AND DESIGN PERSPECTIVE.

We sat down with Executive Chief Engineer Pamela Fletcher and Executive Director of Global Design John Cafaro to talk about the engineering and design innovation that went into creating the revolutionary next-generation Volt.





**PAMELA FLETCHER**  
CHEVROLET EXECUTIVE CHIEF ENGINEER  
ELECTRIFIED VEHICLES

*What are some of the technological breakthroughs in the next-generation Volt?*

Customers tell us they love range, so we wanted to give them more range. We've fine-tuned the aerodynamics and drag coefficient, resulting in up to 53 miles of pure electric range<sup>1</sup>—nearly 40 percent more than the first-generation Volt. The new Voltec propulsion system optimizes two new motors for prime power delivery, while increasing efficiency. Volt offers up to 420 miles of total range<sup>1</sup> without having to stop and plug in. The improvement in fuel economy and EV range will save time otherwise spent at the pump, as we expect owners to go over 1,000 miles between fill-ups by charging regularly<sup>1</sup>, providing a more convenient driving experience for our customers.

*What are the other differences between the first- and second-generation Volt?*

The first-generation Volt was a breakthrough vehicle, and the second-generation Volt takes that idea even further. Volt is the no-compromise electric vehicle with a gas-powered generator on board to take you hundreds more miles beyond its battery range. We worked around every system of the car to make it more efficient and the new vehicle is over 230 pounds lighter than its predecessor. We also have a new battery cell that delivers 20 percent more energy by volume<sup>2</sup>. It's more energy dense but weighs 21 pounds less than the Gen I Volt with a lot more capacity.

**“Customers tell us they love range, so we wanted to give them more range.”**

*Pamela Fletcher*  
CHEVROLET EXECUTIVE CHIEF ENGINEER, ELECTRIFIED VEHICLES



**JOHN CAFARO**  
CHEVROLET EXECUTIVE DIRECTOR  
GLOBAL DESIGN

*How did you approach exterior design for the next-generation Volt?*

When we started putting pencil to paper on the Volt, we wanted something exciting-looking. We knew it was going to have four doors, but we really wanted something sleek with a coupe aesthetic. The biggest change from Gen I to Gen II from an exterior standpoint is that the car's just got a lot more attitude. We spent 340 hours in the wind tunnel, validating and tuning the exterior surface like you might tune a guitar, dialing in the notes just perfectly so they sound right. There is this hint of something beautiful and functional about the car's new shape. We made the next-generation Volt more dynamic and more gestured. It's eco with an attitude.

*What interior enhancements have you designed into the vehicle?*

We added richer materials throughout the interior, so it's more sculpted, swept and has a lot more movement. We also made the controls more intuitive and added advanced phone integration technology. Apple CarPlay<sup>TM3</sup> compatibility allows you to conveniently access select iPhone<sup>®</sup> apps on the Chevrolet MyLink touch-screen<sup>3</sup>. And new for 2017, we will provide Android Auto<sup>TM3</sup> compatibility, so you can access select phone apps in a smart, simple way. Chevrolet design has evolved through the years and we're looking at things totally differently. We're taking some risks along the way, but that's what makes life exciting.



<sup>1</sup> EPA-estimated 53-mile EV range based on 106 MPGe combined city/highway (electric); 367-mile extended range based on 42 MPG combined city/highway (gas). Actual range varies with conditions. <sup>2</sup> Comparison to the initial 2011 Volt battery cell. <sup>3</sup> Vehicle user interfaces are products of Apple and Google and their terms and privacy statements apply. Requires compatible smartphone and data plan rates apply. Android Auto is a trademark of Google Inc. <sup>4</sup> Full functionality requires compatible Bluetooth and smartphone, and USB connectivity for some devices.

# by Aaron Robinson

MY NEXT TOY WILL HAVE A BARF BAG.



I've been upside down in a car once, which was enough. I've been upside down five or six times in an airplane, all in the past two weeks. At the top of my first ever loop-the-loop, I gazed up to see the yawning blue expanse of the Pacific Ocean 4000 feet over my head and a single boat making a pleasant little wake across it as my throat repeatedly snapped closed like a Nikon shutter. On the pullout, my stomach went up in a mushroom cloud and the remains slid down into my left leg. We barrel-rolled, buzzed fishing boats, and skimmed low enough to smell the brine, passing under the cliffs of Catalina Island and weaving in and out of its bays. Two months after back surgery, I had asked the doc if it was okay to fly. I'm pretty sure he was picturing seat 14A with snacks, but oh well.

It all started because of our 60th-anniversary issue last July, which brought me into the orbit of Craig Ekberg, who kindly loaned us his '55 Mercedes-Benz 300SL Gullwing for a story. Besides the Gullwing and a 1915 Stutz Bearcat, Ekberg's eclectic vehicle collection includes a jungle-green Nanchang CJ-6 airplane. It's a Chinese knockoff of a Soviet-era Yak military trainer, examples of which have been squirreled out of the People's Republic in sizable numbers. I had blown up some photos from our anniversary shoot and swung by Ekberg's hangar to drop them off. Next thing I knew I was belting into the back of the Nanchang, a rubber ducky on the panel cowl grinning at me. When I inquired about the two sets of seatbelts, Ekberg said: "Oh, yeah, that's the parachute. Undo this and pull the ring. After you jump out, of course. Ready to go?"

The sturdy, easy-to-fly plane is a cigar-shaped craft with long squared-off wings, two tandem seats, and a nine-cylinder radial engine that can supply 200 mph in pursuit of the capitalist dogs. Nanchangs, I'm told, originally had one-button radios that prevented communication with anything but each other and the tower, and the mechanics disabled them every night to prevent flyaway defections. A number of Nanchangs and Yaks live at my local airport and frolic in the skies as the Tiger Squadron flying team, overflying parades and other civic events and spending Saturdays in mock dogfights with each other.

As a kid, I sometimes took breaks from drawing Vectors with police strobes and crashed Tyrrell F1 cars to draw Cessnas and Pipers. I flipped through my copy of *Flying* magazine's guide to the 1978 models so many times that the cover fell off, but I put all that away when I got my far more attainable driver's license.

Flash forward exactly 30 years; I now live about 10 minutes from Ekberg's airport. A couple of months ago, I took an introductory lesson in a Sling 2 kit plane, a swift and efficient little sparrow best described as a Mazda MX-5 Miata with wings. I don't know much

about flying yet, but I've had loads of teachers in my life and my instructor, Logan Frasier, definitely had the knack, so I signed up for the full course.

It's not cheap, but a private-pilot rating won't cost any more than the '57 Plymouth Belvedere with the chewed interior I was mulling before deciding that my next toy will not be beholden to red lights. Yes, because I need to own stuff, I'll eventually begin looking for a plane that I can actually afford. A decent Cessna 152 is about 30 grand, but they're small and cramped and slow, with all the interior charm of a 1970s Winnebago.

Compared with a modern car, a light aircraft is stupendously crude (true statement: it is possible to be grounded in your Cessna because the bungee cords have stretched), though, as I'm learning, incredibly complex to operate. I have yet to get a plane down a runway without nearly steering into the weeds. Feet that have operated car pedals for three decades are now being asked to steer, and the two-dimensional world gets unhinged once the wheels leave the ground. I have new respect for the terror some track virgins feel on their first day of racing school.

I used my two months of postoperative recuperation to plow into the FAA's dense

*Pilot's Handbook of Aeronautical Knowledge*, which is full of riveting prose, such as: "The radius of a turn is equal to velocity squared divided by 11.26 times the tangent of the bank angle." I learned that, for various reasons, most single-engine propeller planes have a permanent pull to the left, and the word "stall" takes on a far more exciting meaning. This being the first textbook I've opened since the many I barely opened in college, I'm finding it a great cure for cobwebs on the brain.

During my first lesson, a friend texted to see if I had crashed yet. After landing, I had gone over to Ekberg's hangar where, as usual, a crowd was enjoying post-flight libations. I was sitting there talking to one of the old flight-line rats about how lessons used to cost \$25 an hour, including the plane, when one leg of my plastic chair shot away with a loud "crack!" and I plunged to the floor. I untangled myself from the wreckage, accepted one of the several proffered cups of cabernet, and texted back: "Just did." ■



► Attack duck brings luck: the back seat of a Nanchang CJ-6 trainer.

WHY SETTLE FOR A SINGLE  
**GOOD CUP OF COFFEE,**  
WHEN YOU CAN HAVE A GOOD CUP OF COFFEE  
**EVERY SINGLE TIME.**

KEURIG HOT  
**MAXWELL HOUSE**  
GOOD TO THE LAST DROP

MAXWELL HOUSE  
THE ORIGINAL ROAST  
KEURIG

MAXWELL HOUSE  
GOOD TO THE LAST DROP  
THE ORIGINAL ROAST  
KEURIG

EACH MAXWELL HOUSE BLEND IS SELECTED FROM FIVE DIFFERENT TYPES OF BEANS, SO EVERY DELICIOUS CUP IS GOOD TO THE LAST DROP.

Keurig, the Cup and Star design, Keurig Brewed and K-Cup® are trademarks of Keurig, Incorporated. Used with permission. © 2016 Kraft Foods.

# by Ezra Dyer

ENVYING THE BLIND FAITH OF THE BRAND-LOYAL.



**I wish I had an allegiance.** I wish I were a Chevy guy or a Ford guy or an anything-in-particular guy. I wish I cared enough to join a club, or at least procure a decal depicting a mischievous Calvin urinating on the logo of a despised rival. But where cars are concerned, I'm an omnivore, a gigolo sidling up to whatever slab of metal begs my attention. I wish it were otherwise, because the loyalists have it easy. If you've got a tattoo of a Camaro—which I've seen—then chances are you're going to be pretty pumped about buying a Camaro, regardless of whether Ford rolls out a GT350. Life is simpler when Calvin pees away all the decisions.

As plenty of studies indicate, satisfaction becomes elusive when you're confronted by too many options. Like, back on

the frontier there were about five people, so you married your cousin and got on with the business of deciding whether to hire a ferry or try to ford the river (my knowledge of frontier life is mostly informed by the 1980s computer game *The Oregon Trail*). Now there's Tinder, you can go out on a date every night, and nobody's happy. Or so I hear. When single friends show me their Tinder accounts, I furrow my brow, jab at the screen, and say: "You meet lady in phone? How she get out?" and then run off into the woods to scour rotten logs for insects to eat.

While I have no way to prove it, I suspect that die-hard brand loyalty was more common before the internet arrived to dispense infinite inventory and instant criticism. For instance, when I was a kid, my grandfather never drove anything but Cadillacs, even though he probably knew they were mediocre. He once contested a speeding ticket by arguing that his 1985 Seville couldn't physically attain the speed he was clocked at unless he had a running start from the top of a mountain three states over. The judge threw out the ticket, validating the bold "My Car Is Real Slow" defense.

That '85 Seville sailed along on a relaxed 135 horsepower, so his subsequent '91 STS felt like a Yenko Camaro by comparison. I was riding in back when he demonstrated the new hopped-up 4.9-liter V-8,

*"As plenty of studies indicate, satisfaction becomes elusive when you're confronted by too many options."*

precipitating another encounter with the law. He escaped with a warning, possibly because a Florida cop was mildly amused by a senior citizen redlining his Seville down PGA Boulevard.

My grandfather stuck with Cadillac long enough to witness the company go from building sadly underpowered cars to building terrifyingly overpowered ones. His Northstar STS attempted, with varying degrees of success, to route 300 horsepower through the front tires. By then I was old enough to drive it, and I remember

his admonition the first time I floored it to merge onto the highway: Keep both hands on the wheel. It was good advice, because I think STS stood for Severe Torque Steer. Still, did the guy ever lament that he didn't buy a BMW or a Jag or a Lexus, cars he would've loved? No, because as far as he was concerned, they didn't exist. He was a Cadillac guy, and that was that.

I, on the other hand, have absolutely no loyalty to anyone. My driveway is a meritocracy, the result of research, of methodical winnowing, the distillation of carefully weighted priorities. It takes me forever to buy a car, and even then the wander-eye doesn't stop. It's a form of torment, really. I wish I could be like my sister-in-law, who occasionally solicits my opinion on potential vehicle purchases. Giving her advice is easy, because she drives a 2005 Chevy Suburban and will only consider replacing it with another Suburban. So she emails me a listing and I say: "Yep, that sure is a Suburban! Looks good to me." When she ultimately pulls the trigger, I'm thinking that she'll go with the Suburban.

As for the rest of us, I wondered whether we'd be happier if Sergio Marchionne merged away our automotive options. So I got in touch with Barry Schwartz, a professor at Swarthmore College and author of *The Paradox of Choice: Why More Is Less*. Schwartz is an expert on the stresses caused by an overabundance of choices, so I wanted to know

whether he thought brand loyalty might be a form of psychological defense for car buyers, a shortcut to circumvent endless deliberations and buyer's remorse.

"There's no question that brand loyalty makes car buying easier," Schwartz says. "It reduces the choice problem quite considerably. And people give up pretty little, given how high quality almost all cars are these days." True enough.

And how does Schwartz pick a car? "I've been driving a Toyota Camry since 1986," he says. "Car choosing takes about a half-hour. I will, however, be buying a Prius this summer."

Well, that's a safe bet, too. Just pick the Prius or the Prius c or the Prius v. And if it's the first one, it just got redesigned, so the 2015 and 2016 are different cars. Now, your 2015 had a plug-in model . . . speaking of which, that Chevy Volt is sweet. And have you seen the lease prices on BMW i3s?

I don't know, Professor. I don't say this very often, but maybe you should just stick with the Camry. ■

# Introducing the new V1

**V1 rarely changes on the outside.  
Can you spot what's new?\***



Can you spot the difference?



► *ESP added to enable info sharing with auxiliary devices.*

Can you spot the difference?\*\*



► *Longer range: warning distance increased on Ka-band.*

Can you spot the difference?



► *Laser warning redesigned to fit within original-height case.*

Can you spot the difference?



► *New LED display identifies each of four bands: X, K, Ka and laser.*

Can you spot the difference?

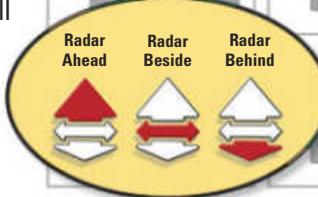


► *Front and rear laser-warning added; requires taller case.*

Can you spot the difference?



► *V1 debuts with radical new feature—the Radar Locator.*



\*Answer: Nope, Junk-K Fighter is a software algorithm.

\*\*Answer: Nope, but V1 owners sure know it's there.



Mike Valentine  
Radar Fanatic

**Call toll-free 1-800-331-3030**

- Valentine One Radar Locator with Laser Detection - \$399
- Carrying Case - \$29
- Concealed Display - \$39
- SAVVY® - \$69
- V1connection™ - \$49
- V1connection™ LE - \$49

Plus Shipping / Ohio residents add sales tax

**30-Day Money-Back Guarantee**

Valentine One is a registered trademark of Valentine Research, Inc.

[www.valentine1.com](http://www.valentine1.com)

**Valentine One®**  
RADAR LOCATOR

Valentine Research, Inc. Ph 513-984-8900  
Department No. Y846  
10280 Alliance Road  
Cincinnati, Ohio 45242  
Fx 513-984-8976



# by Peter Manso

WHY DO RACERS VOTE REPUBLICAN?



**In this wacky election cycle** of ours, I'm being asked by some of my academic neighbors here in Berkeley to generalize on how racers vote. My answer is simple: The majority of car people, especially racers, are righties. As evidence, I proffer Richard Childress and his years of serving on the NRA's board of directors; Roger Penske as one of the country's herculean big-money contributors to Republican presidential candidates; and "Big Daddy" Don Garlits, who years back ran as a candidate for Florida's 5th Congressional District, calling for the FBI to "turn up the heat" on any American failing to espouse patriotic beliefs. The question of a racer's GOP affinity is not "if" so much as "why," and the answer is that conservative politics mirror who and what these guys really are.

What's the difference between a liberal and a conservative? For the quick and easy answer we must go to John Locke and Edmund Burke, the two 17th- and 18th-century English philosophers who cemented the left-right distinction for all of modern times. The liberal, per Locke, believes in the perfectibility of mankind, whereas Burke's "Reflections on the Revolution in France," a bestselling pamphlet when published in 1790, preached human limitation and the doggedness of original sin. For the conservative, government is suspect. To the liberal, society should be improved through human intelligence, which is the seed of all human progress. Conservativism sees human beings as bestial and selfish; people are basically competitive, as well as unequal in their abilities or value to society, and those who contribute more deserve greater rewards. The well-intentioned collectivism of the liberal, the conservative argues, only deprives society of its vitality and inhibits the achievement that comes with individualism.

Listen to Richard Petty: "The majority of the people I associate with are conservative because they make their own decisions on what to do on the race car, when to make pit stops. They're very individual people.... City people wind up more liberal because they're depending on somebody to own their house or clean the streets."

*"He is not a normal person, no 9-to-5'er with the security of dental insurance, but a self-absorbed, self-enmeshed figure."*

There have been exceptions. Ayrton Senna gave huge sums to Brazil's poor, and Paul Newman's charities and support of Eugene McCarthy and George McGovern put him on the left. But the racer's task, first and foremost, is to test himself. He is not a normal person, no 9-to-5'er with the security of dental insurance, but a self-absorbed, self-enmeshed figure. His job is to live on the edge and do so unrelentingly, with the knowledge that there can be a very steep price to pay for failure.

Today's top drivers are, to a one, rich,

and the Republicans are the party of property. But leave the money aside and what we're talking about is a life of tension, for racers pursue perfection in a world constrained by limits. Paradox is their middle name. Though most of these guys would never admit it, they do toss and turn at night, playing and replaying an endless filmstrip of the approach to Eau Rouge at Spa-Francorchamps, say, or scenes of yet-untried drafting moves at Daytona or Charlotte. Like co-dependents trapped in longtime marriages, many, I have found in talking to racers for the past 40 years, may find themselves hurriedly phoning crew chiefs or team engineers at 2:00 a.m., wanting to brainstorm on how to make their cars go faster. Formula 1, IndyCar, NASCAR; it makes no difference.

What a professional racer does is hard. The cozy, copacetic myth of "teamship" fostered by money-minded sponsors backed up by a well-lubricated PR apparatus is bullshit. The driver is alone. Forget the spotters, the radio bud implanted in his ear, the computer experts in the pits; inside that car, he is in a vacuum, with only his feet on the pedals, chasing this strangest of paths to fulfillment he's chosen as his life's work. Like many an artist, he's driven, and it's not hard to see that racing drivers are simply too focused, too self-centered to spend much time thinking about homelessness, racism, unemployment, or the unbalanced economy. "It's me and me alone" is the mantra.

By definition, champions are brilliant, but a champion is nothing if not a prodigy of focus and will.

Sir Jackie Stewart explained to me years ago that "to completely master this machine, to be able to tell it exactly what you want it to do and to drive yourself along with the machine to the very limit that only you yourself can determine, why, this requires a tremendous amount of honesty—honesty in your own personality and your belief in who you are and how good you are."

Who do you hear most clearly here, Clinton or Trump-Cruz-Bush & Co.? It's been said that no one with a heart can resist being a liberal, and that no one who has a brain can avoid being a conservative. But the answer for a racer, I think, is obvious. ■

*Peter Manso, a fallen-away academic, has written a number of books, including Pulitzer Prize-nominated bios of Marlon Brando and Norman Mailer, and *Faster!* his account of Sir Jackie Stewart's 1970 season.*

# THIS IS THE FORD F-150

## AND EVERY OTHER TRUCK IS HISTORY

### THE ADVANTAGES OF ALUMINUM ARE HUGE

Up to 700 lbs. lighter

Most towing power\*

Best payload capacity\*\*

Highest gas mileage†

5-star safety rating††

THE FORD F-150

[FORD.COM](http://FORD.COM)



\*Class is Full-Size Pickups under 8,500 lbs. GVWR based on Ford segmentation. When properly equipped with available 3.5L EcoBoost® V6, 4x2. \*\*Class is Full-Size Pickups under 8,500 lbs. GVWR based on Ford segmentation. When properly equipped with available 5.0L V8, 4x2. †EPA-estimated rating of 19 city/26 hwy/22 combined mpg, available 2.7L EcoBoost V6, 4x2. Actual mileage will vary. Class is Full-Size Pickups under 8,500 lbs. GVWR based on Ford segmentation.

††Government 5-Star Safety Ratings are part of the National Highway Traffic Safety Administration's New Car Assessment Program at [www.safercar.gov](http://www.safercar.gov).

Try to avoid water higher than the bottom of the hubs and proceed slowly. Refer to your owner's manual for detailed information regarding driving through water.

# “ You bet

# I have

# WeatherTech®”



#### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: **800-441-6287**



American Customers  
[WeatherTech.com](http://WeatherTech.com)



Canadian Customers  
[WeatherTech.ca](http://WeatherTech.ca)



European Customers  
[WeatherTechEurope.com](http://WeatherTechEurope.com)



**WeatherTech®**  
American Manufacturing Done Right!

# Laser Measured FloorLiner™



Accurately and completely  
lines the interior carpet

Material provides soft touch top, rigid  
core strength and bottom surface friction

Available in Black, Tan and Grey



## All-Weather Floor Mats

Deeply sculpted channels designed to  
trap water, road salt, mud and sand

Will not curl, crack or harden  
regardless of temperature

Available in Black, Tan and Grey  
for virtually any vehicle



### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: **800-441-6287**



American Customers  
**WeatherTech.com**



Canadian Customers  
**WeatherTech.ca**



European Customers  
**WeatherTechEurope.com**

## No-Drill MudFlap

Protect your vehicle's most vulnerable rust area

Installs without tire/wheel removal

No drilling into the vehicle's fragile metal surface

Available for trucks and SUVs



## Cargo/Trunk Liner

Digitally designed for each application

Complete trunk and cargo area protection

Remains flexible under temperature extremes

Available in Black, Tan and Grey



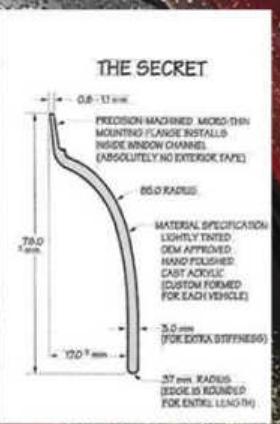
**WeatherTech®**  
American Manufacturing *Done Right!*

# In-Channel Side Window Deflectors

No exterior tape needed

Reduces wind noise and allows interior heat to escape

Easy to Install



Designed and Engineered in USA - Handcrafted in Germany

## TechLiner®

Flexible and durable

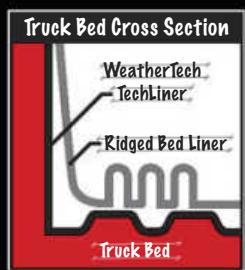
No messy sprays or drilling needed

100% recyclable, odorless material

Chemical and UV resistant



TechLiner® Works Well Under  
Rigid Bed Liners to  
Protect Against Paint Wear



### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: **800-441-6287**



American Customers  
**WeatherTech.com**



Canadian Customers  
**WeatherTech.ca**



European Customers  
**WeatherTechEurope.com**

# CargoTech®

## Cargo Containment System



# BumpStep®

## Hitch Mounted Bumper Protection

Protect your bumper from minor accidents

Fits standard 2" receiver hitch

Safely stand on the step (up to 300lbs.) for everyday tasks



**WeatherTech®**  
American Manufacturing *Done Right!*

# POUR



042

*car meets road*

**WE TAKE THE NEW  
BMW M2 TO DEATH  
VALLEY AND PUT  
THE HAMMER DOWN.**

*by Tony Quiroga*

---

*photography by GREG PAJO*

ING  
HITON







## Albert Hammond sang it best: “It never rains in California, but girl, don’t they warn ya; it pours, man, it pours.”

A winter storm is pounding Southern California, and wouldn’t you know it? Its arrival perfectly coincides with our week with the new BMW M2. What luck. It pours, man, it pours.

To beat the storm, we’re headed east in the hope that the Sierra Nevada’s prodigious rain shadow will keep us dry. Three hours northeast of Los Angeles is Olancha, a tiny settlement with a population of 192. We pull into an abandoned diner to consider our options. It’s still raining out here, but the forecast is dry for Day Two of M2, so we make plans to settle in nearby Ridgecrest for the night.

Olancha sits at the origin of the eastern segment of California State Route 190, the road to Death Valley. A C/D favorite, 190 starts out as lonesome straightaways and CinemaScope vistas seemingly pulled from the film *Vanishing Point*. Blue mountains capped with snow surround us. Off to the south are dunes. A pack of coyotes eyes the M2, and a clear view of the road ahead stretches for miles. Despite this, 190 is not exactly an American autobahn. A few years ago, our deputy editor learned that four-figure lesson from an Inyo County sheriff.

L.A.’s drought-parched reservoirs are beginning to fill, but, as hoped for, we’re staying dry in the desert rain shadow. After spending some of the morning on surrounding roads, we venture back to 190 to find it as slick and glazed as a Krispy Kreme original. The M2 bucks underneath us, its wide Michelin Pilot Super Sports singing over the coarse, 40-grit asphalt. Knowing a ticket for 100 mph has \$1000 consequences, we keep the speed blasts brief. Fortunately, the road is barely traveled in the winter months. We count eight cars in the first hour of driving. In the summer, the desert heat brings tourists and police patrols. Still, we

delay probing the 164-mph top speed till we reach the test track, even though the M2 is stable at that speed.

There's a lot of big-brother M4 under the M2, and the regular 2-series' diminutive body swells to cover the wider parts. From certain angles, the M2 appears to have the mumps. The limited-slip differential, the forged 19-inch wheels, and most of the aluminum suspension components are shared with the M4, but the M2 has its own dampers, springs, and slightly narrower tires. Like the M4's, its very stiff setup will jiggle your flabby bits. There's not so much as a quiver from the structure, however. A plate added to the front end cinches the already-tight 2-series structure even tighter.

After a couple of hours, sunlight dries the road and we head into the roughly 15-mile section of 190 that carves through the Panamint Range and into Death Valley National Park. Through the mountain pass, the M2 acts exactly like an M4. There's dogged grip from the Michelinians—actually, 0.99 g worth of easily used stick, says the skidpad. The brakes are pulled straight from the M4, and that means four-piston calipers in front and two-piston units in the rear clamp iron rotors pinned to aluminum hats. Pedal bite is excellent, and the brakes actually became stronger after repeated stops from 70 mph in testing.

We pass Father Crowley Vista Point, named for John J. Crowley, an Irish priest who served the area in the 1920s and '30s. Crowley fought the city of Los Angeles for



## Naturally Deserted

A mix of long straights and tight corners that cut over the Panamint Range, California Route 190 pairs well with the M2's turbocharged horsepower and nimble handling. In the summer, high temperatures and chalk-powder scenery bring in their share of tourists. But the winter temps can fall below zero, so visitors are sparse and the road is empty. Father Crowley Vista Point is worth a stop for the mountain views and the chance to see Navy F/A-18s in training as they blast through the valley.





↑ Much of the M2's chassis is lifted directly from the M4, but the tires are slightly narrower and the dampers aren't electronically adjustable.



the area's water rights when a parched L.A. diverted the Owens River in 1913. By 1926, L.A. had sucked Owens Lake dry. A once-fertile valley became a windblown dust bowl, and Crowley became known as the Padre of the desert.

We're driving like hell through the good Padre's parish. The M2's six-speed manual slides into gear on short throws, and the 'box brilliantly matches engine revs on downshifts. A seven-speed dual-clutch automatic is optional, but we're enamored with the manual. For a stubborn heel-toe believer, it takes a while to get used to not having to tap the throttle while braking for a corner. If you want to blip for yourself, the rev matching switches off when you deactivate stability control.

Not that downshifting is entirely necessary. The M2's turbocharged 3.0-liter has occipital-flattening thrust from about 2000 rpm to the 7000-rpm redline. An overboost feature bumps the torque peak from 343 pound-feet to 369, and the torque curve draws a wide plateau from 1450 to 4750 rpm. Turbo response is immediate, and the engine is seemingly unaffected by the 4956-foot altitude at Towne Pass. An outgrowth of the N55 line of turbocharged inline-sixes, the M2's 365-hp engine shares its

## BMW M2

■ As solid, powerful, and fun as its bulldog looks imply.

■ Limited steering feel, synthesized engine sounds. ■ Skip the M4 and go straight to the M2, collect \$14,000.

pistons, crank bearings, and redline-smoothing spirit with the M4's S55 engine. In runs to 60 mph, the M2's 4.2-second time is 0.7 second quicker than a manual M235i and only a tenth slower than the six-speed M4. By 100 mph, the gap widens to a second, and there's a 4.7-second difference to 150 mph between the M2 and the M4.

It's loud inside, with 89 decibels of what sounds like a V-8 throbbing through the stereo speakers at full throttle. Set the cruise at 80 mph and there's a deep and ever-present hum in your ears. At 70, it produces an economy-car-like 72 decibels. What we'd really like to hear is the turbine snarl of the M2's inline-six under pressure, instead of the automotive equivalent of Muzak.

As in the M4, the information coming through the light steering is distant and faint. The effort builds in sport mode, but there's no progressive rise in effort when



## BMW M2

### ▼ SPECIFICATIONS

PRICE		
AS TESTED	.....	\$53,245
BASE	.....	\$52,695
VEHICLE TYPE:	front-engine, rear-wheel-drive, 4-passenger, 2-door coupe	
OPTIONS:	Long Beach Blue Metallic paint, \$550	
STANDARD:	power windows and locks, remote locking, cruise control, tilting-and-telescoping steering wheel	
AUDIO SYSTEM:	satellite radio; CD player; minijack, USB, and Bluetooth-audio inputs; 12 speakers	
ENGINE		
turbocharged and intercooled inline-6, aluminum block and head		
BORE X STROKE	3.31 x 3.52 in.	84.0 x 89.6 mm
DISPLACEMENT	182 cu in.	2979 cc
COMPRESSION RATIO	.....	10.2:1
FUEL DELIVERY SYSTEM	.....	direct injection
TURBOCHARGER	.....	BorgWarner B03
MAXIMUM BOOST PRESSURE	.....	14.5 psi
VALVE GEAR	double overhead cams, 4 valves per cylinder, hydraulic lash adjusters, variable intake- and exhaust-valve timing and intake-valve lift	
REDLINE/FUEL CUTOFF	.....	7000/7300 rpm
POWER	.....	365 hp @ 6500 rpm
TORQUE	.....	369 lb-ft @ 1450 rpm
DRIVETRAIN		
TRANSMISSION	.....	6-speed manual
FINAL-DRIVE RATIO	.....	3.46:1, limited slip

GEAR	RATIO	MPH PER 1000 RPM	MAX SPEED IN GEAR (rpm)
1	4.11	5.2	38 mph (7300)
2	2.32	9.3	68 mph (7300)
3	1.54	14.0	102 mph (7300)
4	1.18	18.3	134 mph (7300)
5	1.00	21.5	157 mph (7300)
6	0.85	25.4	164 mph (6450)

CHASSIS	
unit construction	
<b>BODY MATERIAL:</b>	steel and aluminum stampings
<b>STEERING</b>	rack-and-pinion with variable electric power assist
<b>RATIO</b>	15.0:1
<b>TURNS LOCK-TO-LOCK</b>	2.3
<b>TURNING CIRCLE CURB-TO-CURB</b>	38.4 ft
<b>SUSPENSION</b>	
F: ind; strut located by 1 diagonal link and 1 lateral link, coil springs, anti-roll bar	
R: ind; 2 diagonal links, 2 lateral links, and a toe-control link per side; coil springs; anti-roll bar	
<b>BRAKES</b>	
F: 15.0 x 1.2-in vented, cross-drilled disc	
R: 14.6 x 0.9-in vented, cross-drilled disc	
<b>STABILITY CONTROL</b>	.... fully defeatable, traction off, competition mode

WHEELS AND TIRES	
<b>WHEEL SIZE/CONSTRUCTION</b>	..... F: 9.0 x 19 in R: 10.0 x 19 in/ forged aluminum
<b>TIRES</b>	Michelin Pilot Super Sport F: 245/35R19 93Y R: 265/35R19 98Y

### EXTERIOR DIMENSIONS

WHEELBASE	.....	106.0 in
LENGTH	.....	176.2 in
WIDTH	.....	73.0 in
HEIGHT	.....	55.5 in
FRONT TRACK	.....	62.2 in
REAR TRACK	.....	63.0 in
GROUND CLEARANCE	.....	4.8 in

### INTERIOR DIMENSIONS

SAE VOLUME	..... F: 52 cu ft R: 37 cu ft
TRUNK	..... 14 cu ft

### NOTABLE HIGHLIGHTS

The M2's engine is a so-called top-output variant of the older N55 found in most BMWs and not the newer, modular B-series nor a Motorsport "S" engine. The pistons, rings, main bearing shells, and closed-deck block design are, however, borrowed from the M3/M4's S55 inline-six.



049

turning into a corner. Too often the car is gripping hard—or worse yet, slipping—while the steering tells you nothing. It's best to ignore the paltry information coming through the steering wheel and trust in the chassis, as the handling is spectacular. It's both playful and secure, and the firm suspension stitches the 3415-pound M2 to the road. And yet, more than once we found ourselves daydreaming about the perfectly weighted and honest steering of a Porsche Cayman.

On the eastern edge of the mountain pass is the Panamint Springs Resort's gas station, where a gallon of premium costs \$5.29. In 1000 miles of driving, the M2 averaged 20 mpg. That dips into the teens, though, when running fast over highway 190, the 2-series' little 13.7-gallon tank emptying in short order. In about two hours of driving back and forth over the mountains, we've burned through half a tank. It will be enough for a run into Death Valley and back to the mining town of Trona without buying any \$5 gas.

Long straights on the valley floor turn into long, high-speed

↑ The M2's turbo six is a virtually lag-free source of power. Lighter than the M4, the 365-hp M2 is nearly a match for its 425-hp big brother.

sweepers over the mountain and into Death Valley. Our attention diverts to the M2's interior. The cabin is standard 2-series fare, dressed up with M2-specific gauges and accented with a naked carbon-fiber-like weave. There is some scratchy, shiny plastic between the seats, but it's mostly out of sight. Our preproduction example has us manually adjusting the seats and the fan speeds; production versions will have power seats and automatic climate control.

On these drawn-out esses, thoughts reel back to the late 1-series M, the M2's predecessor. A skunkworks project, the 1-series M looked like a 2-series done by Japanese Porsche monsterier RAUH-Welt Begriff, but it had a smooth and strong six, balanced handling, tons of refinement and rigidity, and perfect steering clarity. It was like a BMW's greatest-hits album. Lucky buyers quickly snapped up the limited run of 740 cars.

The M2 is a modern BMW, which means the steering is a bit removed and the stereo plays engine sounds. But it has the look, if not the irrepressible soul, of the 1-series M. It's a shrunken M4, both in size and price. An M4 starts at \$66,695 and the M2 costs \$52,695. Get the M2 and save the \$14,000 for a rainy day. ■

## CAR AND DRIVER TEST RESULTS

### ACCELERATION

ZERO TO	SECONDS
30 MPH	1.8
40 MPH	2.6
50 MPH	3.4
<b>60 MPH</b>	<b>4.2</b>
70 MPH	5.5
80 MPH	6.7
90 MPH	8.1
<b>100 MPH</b>	<b>10.0</b>
110 MPH	12.1
120 MPH	14.5
130 MPH	18.0
140 MPH	22.2
150 MPH	27.0
ROLLING START, 5-60 MPH	4.7
TOP GEAR, 30-50 MPH	5.7
TOP GEAR, 50-70 MPH	4.7
<b>1/4-MILE</b>	<b>12.7 sec @ 113 mph</b>
TOP SPEED (GOV LTD)	164 mph

■ **TEST NOTES:** Easy to launch. Rev to 2100 rpm, release the clutch, and go. Hooks up well for a car with this much torque. Quick shifts into second gear include a crunch, but the M2 never failed to engage. Long cool-downs ensured that the engine remained in overboost mode.

### FUEL

CAPACITY	13.7 gal
OCTANE	93 (recommended)
ERA CITY/HWY	18/26 mpg (C/D est)

**C/D OBSERVED** **20 mpg**

### INTERIOR SOUND LEVEL

IDLE	51 dBA
FULL THROTTLE	89 dBA
70-MPH CRUISING	72 dBA

### BRAKING, 70-TO-ZERO MPH

FIRST STOP	167 ft
<b>SHORTEST STOP</b>	<b>159 ft</b>
LONGEST STOP	167 ft
FADE RATING	NONE

■ **TEST NOTES:** The pedal is not overly stiff, but after a bit of travel the big brakes bite hard. At normal speeds, it's easy to brake quickly and smoothly. Stopping distances improved as the brakes and tires warmed up. Zero drama, even after slowing from 150 many times.

### HANDLING

**ROADHOLDING, 300-FT-DIA SKIDPAD** **0.99 g**  
**UNDERSTEER** MINIMAL

■ **TEST NOTES:** Clings to the skidpad tenaciously; exploiting the abundant grip is easy. Front pushes gradually and recovers immediately with a slow lift of the throttle. The rear end will start drifting if provoked by big throttle inputs. Steering feel is lacking.

### WEIGHT

CURB	3415 lb
PER HORSEPOWER	9.4 lb
DISTRIBUTION	F: 51.7% R: 48.3%
TOWING CAPACITY	0 lb

tested by TONY QUIROGA  
in California City, California

### COMPETITORS

AUDI TTS (2.0-L I-4, 292 HP 6-SP AUTO)

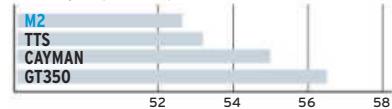
BMW M2 (3.0-L I-6, 365 HP 6-SP MAN)

FORD MUSTANG SHELBY GT350 (5.2-L V-8, 526 HP, 6-SP MAN)

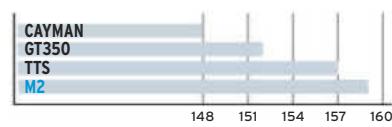
PORSCHE CAYMAN (2.7-L FLAT-6, 275 HP, 6-SP MAN)

### CURRENT BASE PRICE dollars x 1000

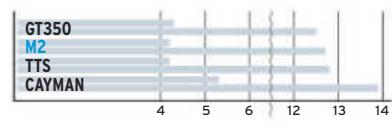
Includes freight and performance options.



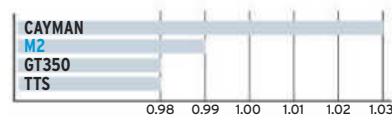
### 70-0 BRAKING feet



### ACCELERATION 0-60 & 1/4-mile, seconds



### ROADHOLDING 300-foot skidpad, g



Shell V-Power NITRO+  
Premium Gasoline

The Official Fuel of  
CAR AND DRIVER

# C A L I F O R N I A

CAN THE NEW MALIBU FIND  
SOME REAL ESTATE AMONG  
THE BEST MID-SIZE SEDANS?



CHEVROLET  
MALIBU LT

PRICE > \$27,940  
POWER > 163 hp  
TORSO > 184 lb-ft  
WEIGHT > 3159 lb  
C/D OBSERVED MPG > 23

COMPARO

BY AARON ROBINSON / PHOTOGRAPHY BY CHARLIE MAGEE

# DREAMING



MAZDA 6 i  
TOURING  
PRICE > \$26,130  
POWER > 184 hp  
TORQUE > 185 lb-ft  
WEIGHT > 3227 lb  
C/D OBSERVED MPG > 25

TOYOTA  
CAMRY SE  
PRICE > \$27,075  
POWER > 178 hp  
TORQUE > 170 lb-ft  
WEIGHT > 3297 lb  
C/D OBSERVED MPG > 23

HONDA  
ACCORD  
SPORT  
PRICE > \$26,900  
POWER > 189 hp  
TORQUE > 182 lb-ft  
WEIGHT > 3356 lb  
C/D OBSERVED MPG > 23

LET'S START THE PROCEEDINGS WITH A COUPLE OF TOASTS. First, here's to the ancient Chumash Indians, the name of whose little creekside California hamlet of Humaliwo got boiled down by the tongues of the conquering Spanish into the word Malibu. And here's to the widow Rhoda May Knight Rindge, or May to her friends. The last owner of the 17,000-acre Rancho Malibu, she battled the burgeoning Los Angeles County to stop its plans for a coastal road through her property. But back in 1919, L.A. got what L.A. wanted, and the Pacific Coast Highway was born as the Roosevelt Highway. Luckily, Rindge did not live to see the banks of her beloved Malibu Creek developed with outlets for Starbucks and Yogasmoga. Nor, indeed, did she live to see the mid-size Chevy Chevelle that took the rancho's name in 1964.

Why all the fuss over Malibu in this test of four mid-size sedans? No particular reason, except that we decided to take the new Malibu and its most formidable competitors to Rindge's old, sunny seaside homestead, where the miles of good road are today outnumbered only by the suntanned utopians carrying their teacup Maltipoos.

Radically redesigned this year, the Chevy Maltipoo, er, Malibu has its name written on the front doors in widely spaced movie-theater-marquis letters, as if a David Lean epic is about to open. To keep the prices real, we opted for the base engines on all the cars in this test.



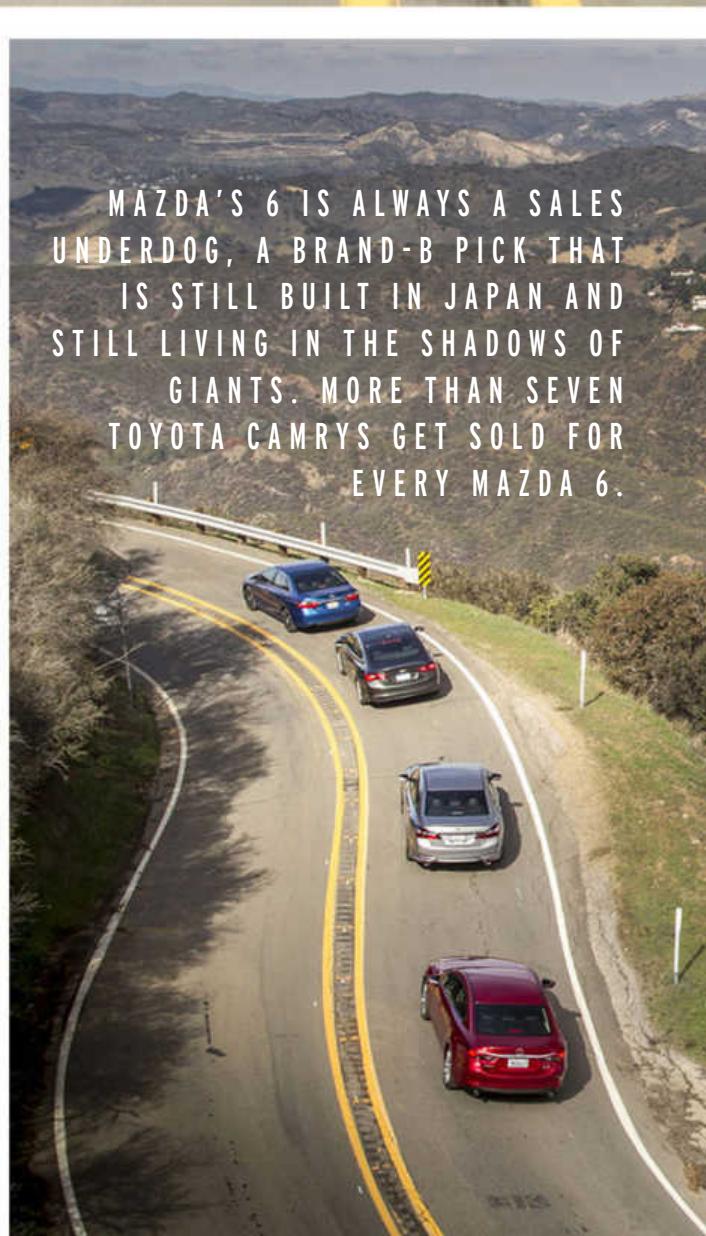
While the others here have conventionally breathing four-cylinder engines displacing 2.4 to 2.5 liters, the Malibu goes turbo right off the bat with a blown 1.5-liter. Our LT is a couple of steps up from the bottom, and as equipped is the most expensive car here at \$27,940. However, knock off the \$1150 sunroof that we opened just once, to make sure it did open, and the Malibu would be the second-cheapest car in this test.

We're always extolling the Honda Accord, and its near-perennial status as a *10Best* winner ensures its place in this test as the high castle for everyone else to throw rocks at. The version to buy is the Sport manual, but as this is a slush-only test, we took this opportunity to live for a while with the optional continuously variable transmission. A CVT is as far as you can possibly get from a manual unless your car has hydrostatic drive. The Accord doesn't, but it does offer a Sensing package with a bunch of anti-collision systems that add a grand to the price. Even so, at \$26,900, this Accord Sport represents the second-lowest price.

Mazda's 6 is always a sales underdog, a brand-B pick that is still built in Japan and still living in the shadows of giants. More than seven Toyota Camrys get sold for every Mazda 6. But the 6 is a former *comparo* winner and *10Best* awardee. If the Malibu is to earn space on the zestier side of the family-car menu, it's the 6 that it will have to contend with. The current 6 debuted in 2014 but got an update for 2016 that includes a fancier interior. Of the three trim levels available, our Touring is the middle one, with a 184-hp 2.5-liter four and a six-speed automatic. Our sleek test car arrived with just one option: \$300 Soul Red paint.

And speaking of the big C, here comes the sales champ, natty in a swish blue robe and rolling on 18-inch aluminum wheels with

MAZDA'S 6 IS ALWAYS A SALES UNDERDOG, A BRAND-B PICK THAT IS STILL BUILT IN JAPAN AND STILL LIVING IN THE SHADOWS OF GIANTS. MORE THAN SEVEN TOYOTA CAMRYS GET SOLD FOR EVERY MAZDA 6.





VEHICLE	CHEVROLET MALIBU LT	HONDA ACCORD SPORT	MAZDA 6 i TOURING	TOYOTA CAMRY SE
BASE PRICE	\$25,895	\$25,100	\$24,780	<b>\$24,675</b>
<b>PRICE AS TESTED</b>	<b>\$27,940</b>	<b>\$26,900</b>	<b>\$26,130</b>	<b>\$27,075</b>
DIMENSIONS				
LENGTH	193.8 inches	192.5 inches	191.5 inches	190.9 inches
WIDTH	73.0 inches	72.8 inches	72.4 inches	71.7 inches
HEIGHT	57.7 inches	57.7 inches	57.1 inches	57.9 inches
WHEELBASE	111.4 inches	109.3 inches	111.4 inches	109.3 inches
FRONT TRACK	62.6 inches	62.4 inches	62.8 inches	62.4 inches
REAR TRACK	62.5 inches	62.7 inches	62.4 inches	62.0 inches
INTERIOR VOLUME	<b>F: 56 cubic feet</b> R: 47 cubic feet	<b>F: 56 cubic feet</b> R: 47 cubic feet	<b>F: 54 cubic feet</b> R: 46 cubic feet	<b>F: 53 cubic feet</b> R: 48 cubic feet
TRUNK	<b>16 cubic feet</b>	<b>16 cubic feet</b>	<b>15 cubic feet</b>	<b>15 cubic feet</b>
<b>POWERTRAIN</b>				
ENGINE	turbocharged DOHC 16-valve inline-4 91 cu in (1490 cc)	DOHC 16-valve inline-4 144 cu in (2356 cc)	DOHC 16-valve Atkinson-capable inline-4 152 cu in (2488 cc)	DOHC 16-valve inline-4 152 cu in (2494 cc)
<b>POWER HP @ RPM</b>	<b>163 @ 5600</b>	<b>189 @ 6400</b>	<b>184 @ 5700</b>	<b>178 @ 6000</b>
<b>TORQUE LB-FT @ RPM</b>	<b>184 @ 2000</b>	<b>182 @ 3900</b>	<b>185 @ 3250</b>	<b>170 @ 4100</b>
REDLINE/FUEL CUTOFF	6500/6600 rpm	6800/6800 rpm	6500/6250 rpm	6300/6300 rpm
LB PER HP	19.4	17.8	<b>17.5</b>	18.5
DRIVELINE				
TRANSMISSION	6-speed automatic	CVT	6-speed automatic	6-speed automatic
DRIVEN WHEELS	front	front	front	front
GEAR RATIO:1/MPH PER 1000 RPM/	<b>1</b> 4.58/5.2/34 <b>2</b> 2.96/8.0/53 <b>3</b> 1.91/12.5/83 <b>4</b> 1.45/16.4/108 <b>5</b> 1.00/23.8/130 <b>6</b> 0.75/31.7/130	<b>1</b> LOW 2.65/8.9/61 <b>2</b> HIGH 0.41/58.1/127	<b>1</b> 3.55/5.7/36 <b>2</b> 2.02/10.0/63 <b>3</b> 1.45/14.0/88 <b>4</b> 1.00/20.3/127 <b>5</b> 0.71/28.7/135 <b>6</b> 0.60/33.9/118	<b>1</b> 3.30/6.2/39 <b>2</b> 1.90/10.8/68 <b>3</b> 1.42/14.5/91 <b>4</b> 1.00/20.6/112 <b>5</b> 0.71/28.9/112 <b>6</b> 0.61/33.9/112
MAX MPH				
AXLE RATIO:1	3.23	3.24	3.81	3.63
<b>CHASSIS</b>				
SUSPENSION	<b>F</b> : struts, coil springs, anti-roll bar <b>R</b> : multilink, coil springs, anti-roll bar	<b>F</b> : struts, coil springs, anti-roll bar <b>R</b> : multilink, coil springs, anti-roll bar	<b>F</b> : struts, coil springs, anti-roll bar <b>R</b> : multilink, coil springs, anti-roll bar	<b>F</b> : struts, coil springs, anti-roll bar <b>R</b> : struts, coil springs, anti-roll bar
BRAKES	<b>F</b> : 11.8-inch vented disc <b>R</b> : 11.3-inch disc	<b>F</b> : 12.3-inch vented disc <b>R</b> : 11.1-inch disc	<b>F</b> : 11.7-inch vented disc <b>R</b> : 10.9-inch disc	<b>F</b> : 11.7-inch vented disc <b>R</b> : 11.0-inch disc
STABILITY CONTROL	fully defeatable, traction off	fully defeatable	fully defeatable	fully defeatable, traction off
TIRES	Goodyear Assurance P225/55R-17 95H M+S	Continental ContiProContact 235/40R-19 96V M+S	Dunlop SP Sport 5000 P225/45R-19 92W M+S	Michelin Primacy MXM4 P225/45R-18 91V M+S
<b>C/D TEST RESULTS</b>				
<b>ACCELERATION</b>				
0-30 MPH	2.7 sec	3.1 sec	<b>2.6 sec</b>	2.9 sec
<b>0-60 MPH</b>	<b>8.0 sec</b>	<b>7.6 sec</b>	<b>7.3 sec</b>	<b>8.0 sec</b>
0-100 MPH	24.7 sec	<b>20.1 sec</b>	20.9 sec	22.4 sec
0-110 MPH	32.8 sec	<b>25.6 sec</b>	27.3 sec	29.1 sec
1/4-MILE @ MPH	16.4 sec @ 85	16.0 sec @ 91	<b>15.8 sec</b> @ 89	16.2 sec @ 88
ROLLING START, 5-60 MPH	8.9 sec	7.6 sec	<b>7.5 sec</b>	8.3 sec
TOP GEAR, 30-50 MPH	4.9 sec	3.9 sec	<b>3.6 sec</b>	4.6 sec
TOP GEAR, 50-70 MPH	5.9 sec	5.0 sec	<b>4.8 sec</b>	5.6 sec
<b>TOP SPEED</b>	130 mph (gov ltd, mfr's claim)	127 mph (gov ltd)	<b>135 mph</b> (gov ltd)	112 mph (gov ltd)
<b>CHASSIS</b>				
BRAKING, 70-0 MPH	<b>171 feet</b>	173 feet	177 feet	180 feet
<b>ROADHOLDING, 300-FT-DIA SKIDPAD</b>	0.86 g	<b>0.87 g</b>	<b>0.87 g</b>	0.83 g
610-FT SLALOM	39.4 mph	39.4 mph	39.5 mph	<b>40.2 mph</b>
<b>WEIGHT</b>				
CURB	<b>3159 pounds</b>	3356 pounds	3227 pounds	3297 pounds
%FRONT/%REAR	61.6/38.4	60.1/39.9	58.9/41.1	61.6/38.4
<b>FUEL</b>				
TANK	13.0 gallons	<b>17.2 gallons</b>	16.4 gallons	17.0 gallons
RATING	87 octane	87 octane	87 octane	87 octane
EPA CITY/HWY	<b>27/37 mpg</b>	26/35 mpg	<b>26/38 mpg</b>	25/35 mpg
<b>C/D 350-MILE TRIP</b>	23 mpg	23 mpg	<b>25 mpg</b>	23 mpg
<b>SOUND LEVEL</b>				
IDLE	42 dBA	<b>41 dBA</b>	42 dBA	<b>41 dBA</b>
FULL THROTTLE	<b>71 dBA</b>	74 dBA	76 dBA	<b>74 dBA</b>
70-MPH CRUISE	<b>65 dBA</b>	67 dBA	67 dBA	<b>67 dBA</b>

tested by **TONY QUIROGA** in California City, California



black accents. This Lawrence Welk of Toyota Camrys—ouch, okay, maybe this Lady Gaga of Camrys—is an SE, with the wheels, Blue Streak Metallic paint, and blue seats and blue-glowing gauges (you gotta really like blue) that are all tossed in with the \$1875 Special Edition package. If you don't fancy blue, pearl white is also available. Our one option, an entertainment-and-navigation suite, costs \$525.

Thus, the Malibu must contend with two market giants in the Accord and Camry and a left-field challenger in the 6. The hugely competitive mid-size segment is home to scores of other entries. But we've bypassed the Sweet 16 and gone straight to the Final Four. Some of the slighted competitors will get a chance in the future to face the winner of this comparo, so we'd better get on with the business of picking one.



#### 4. TOYOTA CAMRY SE

It's not news that we diverge from the mainstream. The Toyota Camry is the big-box store of automobiles, a place you go for predictable convenience and value but not passion or excitement. The new wrapper the Camry got for 2015 is handsome enough, in the same way that a redesigned McDonald's is now clean, modern, and pleasant. However, the Camry's blue interior electronics and blue paint, so sparkly with metal flake as to remind us of the Schwinn Sting-Ray banana seats of our long-gone youth, don't enliven the car much or change its standing as a perfect purchase for the ardently anonymous.

Driving the Camry, it's easy to convince yourself that Toyota has lost interest, despite real evidence that boss Akio Toyoda loves and understands automotive performance. It landed at or near the



← It doesn't matter if Toyota covers it in bright-blue paint and bright-blue seat inserts and bright-blue interior trim. Underneath, all Camrys are beige.

bottom of nearly all the objective tests, a very mild 2.5-liter four straining at the yoke of the second-heaviest car to produce an 8.0-second 60-mph time. We deemed the structure the weakest of the group, the ride a bit clomping, and the vibrations through the floor and steering column not as well damped as in the others.

On the road, the six-speed often hunted for the best gear to keep its four pots boiling, making the Camry feel busy and under-powered. Steering through the canyons and around the El Niño-initiated rock slides that the locals call Rindge's Revenge, the Camry felt less eager to play than the others. We were surprised only that the Toyota delivered the best slalom time, a testament to the chassis' inherent stability under fire.

The Camry has its merits, obviously.

**TOYOTA CAMRY SE**  
+ WELL EQUIPPED FOR THE MONEY, BEST BACK SEAT WITH TWO OR THREE, PERFECT FOR FANS OF THE COLOR BLUE.

■ BORINGEST OF THE BORING TO DRIVE, BACK SEATS DON'T FOLD NEARLY FLAT, SMALL TUNNEL TO THE TRUNK, BUSY TRANSMISSION.  
■ CRUISING HIGH ON ITS REPUTATION BUT NOT MUCH ELSE.

The steering weight was deemed "perfect," and the quiet car was described as "perfectly fine" in a hypothetical world where competitors don't exist. We appreciated getting a sunroof at a price almost a thousand less than the Chevy's. And our keisters judged the back seat the most comfortable for both two and three adults, with a pleasing angle to the rear seat-back and miles of leg- and kneeroom. Pop the trunklid and it rises partway on its springs to welcome your stuff, unlike the Honda or Mazda, which have lazy lids that, once popped, just



lie there like dead fish. However, the Toyota's rear seats don't fold anywhere near flat, as the other cars' do.

Here's a case where a boring car costs about the same as more-interesting cars. What does it say about you if you choose the former?

### 3. HONDA ACCORD SPORT

Like the Camry, the Accord is not flashy. The new Sport trim doesn't help the awkward styling, with its plastic cladding on the rockers and oversized 19-inch wheels, which make the ride firmer than it should be. Also not helping is this year's refresh, which slathered on chrome hither and yon to make the Accord look as if it's wearing diamonds to its job at the DMV.

Once behind the wheel, you can't help but forgive the Accord for any styling staidness. The light and linear steering and the cool, restrained body control are sports-sedan-worthy, making the car feel 500 pounds lighter than it is. Even fitted with the 19s, the structure mostly inhales the bumps, the suspension never betraying a hard edge or harshness beyond what you'd expect with 40-series tires. The brakes respond well, and the power is enough to deliver the second-quickest quarter-mile at 16 seconds flat. "There's a spirit here," wrote senior editor Tony Quiroga, something that is sorely lacking in many cars vying for sedan customers.

Inside, the Accord's practical ethos equates to a low-set dash and full-circle visibility. The seat sponginess earned praise for being just right for long-term comfort both front and back, and the interior materials were lauded for disguising any cheapness, though opinions split on the muted bits of faux carbon fiber. Some thought it handsome and appropriate from a company that once powered Ayrton Senna, while others objected to the fakery.

The editors united in their dislike of the CVT. By our fuel cards, which rated all the cars at 23 mpg except for the thrifty Mazda, which achieved 25, the CVT offers no fuel-economy benefit. Don't believe us? Check the EPA ratings, where the Accord rates only midpack. Also, it forces the engine to alternate constantly between near silence and a labored moan as the transmission seeks just the right ratio for the situation. We know step-gear transmissions are old school, but they work. Granted, in inches-



↑ Styling is a subjective matter, so you might like the Accord's design more than we do. Well, that's fine. But we have yet to meet anyone who likes cars and also likes CVTs.

per-hour commuting you may forget you have a CVT, though in every other situation you'll wonder why Honda, formerly the maestro of internal combustion, now produces cars that moan.

Some things you wish Honda would fix, such as the absence of an external trunk release. Likewise, instead of the newer auto-locking push-to-open fuel doors like the Malibu's, the fuel door must still be released by a floor lever. And there's no digital speed display among the various functions of the trip computer. The Accord makes you realize that an industry rethink of the old two-dial instrument cluster is long overdue.

It's still one of our darlings, and we love the Accord. Just not this particular Accord.



## 2. CHEVROLET MALIBU LT

We timidly approached the new Malibu like abused alley dogs. Can we trust what we're seeing? Should we like it this much? In the end, we surrendered to its charms. The Malibu has its issues, but overall, it wags our tails.

First, there isn't a bad line on it. The proportions are lovely, with a long, 111.4-inch wheelbase (identical to the also-comely Mazda) and a rear-set cabin that slopes alluringly into the trunk. Most front-drive cars have at least one bad, bunched-up angle because the machinery packs the

↓ The Chevy is not overly sporty like the Mazda but neither is it somnolent like the Toyota. Instead, it strikes a nice middle ground with a quiet cabin and alert steering.



nose and creates overhang or the hoodline is a bit too high. Not the Malibu. And not, surprisingly, on the standard 17-inch wheels, which somehow look just right while also greatly improving the ride over the optional 19s we tested it on last year.

The interior shows careful attention. The back seat is spacious, and the tunnel to the trunk, pinched down to smaller apertures in both the Accord and Camry, is enormous. Yet, somehow, the Malibu is both one of the stiffest bodies in the test and the lightest car here, weighing just 3159 pounds even with turbo plumbing and the optional sunroof. An aluminum hood helps.

The comfortable interior shows a touch of Citroën weirdness in the unusual swab of diamond-pattern cloth wrapping the big touchscreen. Small bonuses—such as the umbrella cubby in the front-door pockets, auto-down windows on all four doors, and the superlong reach of the steering telescope—prove that someone was sweating the details. The Malibu's trunk mechanism is the best: There's

CHEVROLET  
MALIBU LT

- ⊕ LOOKS LIKE MIDDLE AMERICA'S AUDI A7, GREAT STEERING, THE QUIETEST ENGINE, THE BEST BRAKES IN THE TEST.
- ⊖ SOME CHEAP PLASTIC, SMALL FUEL TANK, USELESS TAP-SHIFT, GIANT A-PILLARS.
- ⊖ WATCH OUT: GM HAS FINALLY PUT ON ITS THINKING CAP.

an outside button that works whenever the car is unlocked, and the popped trunklid leaps to almost fully vertical.

Some astute people also sorted out the chassis. The Malibu steers with alertness and tackles cornering chores with enthusiasm. The rigid structure makes it feel well built, and the little 1.5-liter is a quiet tug-boat motor, as the interior sound measurements attest. If not exactly a fireball, the engine works exceedingly well with the six-speed, one of those old-school step-gear trannies that is pretty much perfect.

All cars have at least some cheap plastic, but Chevy still isn't good at hiding it. Whereas others use a shallow technical grain that reduces the plastic to black shadow, Malibu displays its cheapness loud and proud. Other demerits: The tap-shift button on the gear selector proved clumsy; the A-pillars are a bit too wide for comfort; and its gas tank, which only holds 13 gallons, could be bigger.

Even so, Chevrolet now sells a legit contender in this class. Welcome back to the fight, boys.





## MAZDA 6 i TOURING

**+** JUST GORGEOUS, STEERING AND SUSPENSION WANT TO PLAY, SPORT MODE BRINGS OUT ITS INNER F1 CAR, FINELY FINISHED. **-** TIRE NOISE, LONG BRAKE-PEDAL TRAVEL, STEERING TELESCOPE IS A BIT STINGY. **■** A LOOKER AND A RUNNER AT A LOW PRICE.

tip control knob between the seats, as in fancy German cars, though it's somewhat wasted unless you get navigation with all the trimmings.

Mazda gets the basics right with flat-folding rear seats and a wide opening for the 15-cubic-foot trunk. It's the only car to give both auto-up and -down at all four windows. And no car here laps up a curve like the 6, with the feistiest steering and the flattest body motion. The 2.5-liter slumped home the quickest drag-strip times as well as an observed fuel economy 2 mpg higher than the others. Running quotidian chores, it purrs quietly, and the transmission is all but invisible unless you push the sport button. Seemingly programmed by Mazda's unemployed ex-Le Mans team, it makes the 6 hellbent

## ★ FINAL RESULTS

RANK	1	2	3	4	
	Mazda 6 i Touring	Chevrolet Malibu LT	Honda Accord Sport	Toyota Camry SE	
VEHICLE					Maximum points available
DRIVER COMFORT	10	9	9	9	8
ERGONOMICS	10	8	9	7	8
REAR-SEAT COMFORT	5	3	4	4	5
REAR-SEAT SPACE*	5	4	5	5	5
TRUNK SPACE*	5	5	5	5	5
FEATURES/AMENITIES*	10	8	10	9	9
FIT AND FINISH	10	9	8	8	7
INTERIOR STYLING	10	9	9	7	6
EXTERIOR STYLING	10	9	9	6	7
REBATES/EXTRAS*	5	0	0	0	0
AS-TESTED PRICE*	20	20	19	19	19
<b>SUBTOTAL</b>	<b>100</b>	<b>84</b>	<b>87</b>	<b>79</b>	<b>79</b>
POWERTRAIN					
1/4-MILE ACCELERATION*	20	20	17	19	18
FLEXIBILITY*	5	5	3	5	4
FUEL ECONOMY*	10	10	8	8	8
ENGINE NVH	10	7	10	8	7
TRANSMISSION	10	9	8	5	7
<b>SUBTOTAL</b>	<b>55</b>	<b>51</b>	<b>46</b>	<b>45</b>	<b>44</b>
CHASSIS					
PERFORMANCE*	20	19	19	20	18
STEERING FEEL	10	9	8	9	7
BRAKE FEEL	10	8	10	8	7
HANDLING	10	9	9	10	7
RIDE	10	8	10	9	8
<b>SUBTOTAL</b>	<b>60</b>	<b>53</b>	<b>56</b>	<b>56</b>	<b>47</b>
EXPERIENCE					
FUN TO DRIVE	25	22	18	20	13
<b>GRAND TOTAL</b>	<b>240</b>	<b>210</b>	<b>207</b>	<b>200</b>	<b>183</b>

\*These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.

Shell V-Power Nitro+  
The Official Fuel of CAR AND DRIVER

for lap times, holding gears longer and executing rapid-fire downshifts under braking. Some drivers wouldn't have minded a middling, "sorta sport" setting, but Mazda is an all-in company.

As is often the case with Mazda, the downside is cabin noise. Tire thrum and thwack are the most pronounced in this machine, partly due to the 19-inch rims wearing 168-mpg-rated Dunlop tires. We would trade some of the 129-pound weight savings over the quieter Accord for more insulation. The long dead zone in the brake pedal seemed out of place in a chassis that is so capable, especially next to the Malibu's firm binders, and the steering wheel doesn't telescope as far as the others, meaning taller folk may suffer.

So the 6 may not be for everyone, but it is definitely the family car for families that enjoy driving. ■

058

. road test

# Double



# Agent

THE SPORTS SEDAN  
THAT'S CLEVERLY DISGUISED  
AS A LUXURY CAR.

by Jeff Sabatini  
photography by Charlie Magee



CADILLAC CT6  
PLATINUM AWD



If the CT6 were truly Cadillac's new flagship, it might well fly a banner of surrender. Because by any reasonable accounting, the CT6 is not a direct competitor to the big German luxury barges. But that's okay. Like the first two generations of CTS sedans, the CT6 is something of an in-betweener, bigger than the mid-size class but less replete than the luxury full-sizers. It covers roughly the same dimensions as the short-wheelbase 7-series that BMW doesn't sell here. But for just \$54,490—about what you'd pay for another BMW, a nicely appointed 3-series—you can get into a base CT6 with a 265-hp turbo 2.0-liter, as Cadillac tries to manage the high-wire act of balancing sales volume with prestige.

A sharper sword in the form of a twin-turbo V-8 has been pledged to the CT6, and hints of an even larger and more majestic Cadillac built off the same new platform continue to circulate. But for now, this is it: A handsome four-door with a four, a six, and a turbocharged six that acquits itself well as a sports sedan that just happens to have a bigger back seat and five more inches of corresponding legroom than the CTS. It will certainly sit atop GM's luxury throne for now; the Platinum-spec car we drove carried a sticker north of \$88,000.

While the CTS is underpinned by the steel Alpha platform it shares with the ATS and Chevrolet Camaro, the CT6 is the first vehicle to ride on GM's Omega platform, which is about two-thirds aluminum with the last sliver of pie stamped in steel. At 4371 pounds, our test car weighs just 11 more than the last aluminum-intensive Audi A8L to hit our scales. The aluminum in the CT6 is mostly situated at the ends of the car, including 13 separate castings that Cadillac says make it stiffer than the CTS. The ferrous metal is concentrated in the midsection and in the A- and B-pillars, floor, and bulkheads. Cadillac says this arrangement makes the cabin less resonant, allowing it to use less sound insulation, which reduces overall weight compared with the same body-in-white built

entirely out of aluminum. Our measurements show the Cadillac to be quieter than a BMW 7-series or Mercedes-Benz S-class. The new structure also allowed Cadillac's designers to lower the car's long hood. Most modern sedans have waist-high fenders and noses, but you can actually lean back and sit on the prow of this one, even when it's shod with 20-inch wheels.

Any chassis engineer will tell you that structural stiffness is key to optimal suspension tuning. But maybe Cadillac aimed

↙ Cadillacs still look best when they're low and long. The CT6's elegant exterior design is seasoned with just a hint of sporty spice.





a little high on the spring and damper rates. The car charges into corners and pulls 0.86 g on our skidpad. It feels very well planted on mountain switchbacks and high-speed sweepers. Indeed, it drives much like its smaller sibling despite having an extra 7.8 inches of wheelbase. Yet its ride only approaches plush on good roads, and after a few hours of feeling every ripple on the not-so-good ones, we might be willing to trade the CT6's magnetorheological dampers for air springs and conventional dampers.

Our four-wheel-drive test car (rear-drive is available only with the 2.0-liter) was equipped with the Active Chassis package, which includes those high-tech shocks as well as a rear-steering system that can pivot the rear wheels up to 3.50 degrees (to shorten the turning radius) or add 2.75 degrees in phase with the fronts (to help foster that planted feeling at speed). The CT6's four-wheel-drive system biases 60 percent of the torque rearward in standard tour mode, which gets bumped up to 80 percent when you select sport mode via a button on the center console. (There's also a third mode for winter, which splits the power equally.) The system does not, however, perform any side-to-side torque vectoring, nor do the brakes assist cornering.

### Cadillac CT6 Platinum AWD

- Drives like a CTS, looks like a big CTS, has a back seat like a Sixty Special.
- Nobody buys the CTS, lacks top-tier luxury-sedan refinement.
- Manages to pull off autodom's toughest trick: making a big car feel agile.

Our test car had its standard all-season tires upgraded to 20-inch 245/40 Pirelli P Zeros. Cadillac has not yet priced this optional summer-tire package, but we were assured that it will be available later in the year. We can certainly credit the tire fitment with producing stellar 152-foot stops from 70 mph. The brakes are impressive in the real world, too, with strong initial bite from the four-piston Brembo calipers and a firm pedal that is always easy to modulate.

We did have the opportunity to briefly drive another CT6 on the all-season tires, which produced a significant reduction in front-end grip and increased understeer compared with the CTS. The Pirellis go a long way toward making the CT6 feel like its smaller sibling. The steering effort is weighty in sport mode, and while the CT6 lacks the exemplary steering feedback of the CTS, its tuning seems appropriate to the car's size.

The CT6 gets a new engine, a turbocharged 3.0-liter V-6 that makes 404 horsepower and delivers 400 pound-feet of torque. It has a similar wail to the turbo 3.6 in the CTS Vsport and packs enough punch to do zero to 60 mph in five seconds flat. It's quick enough, yet it might be even quicker. With a pair of turbochargers, a clutch responsible for routing torque to the front wheels, and eight speeds in its automatic transmission, there are quite a few moving parts in the CT6's drivetrain, and we occasionally found the computers groggy in their synchronization calculations. The throttle response can lag from a standing start and at low speeds, particularly when the car is in tour mode. Cadillac admitted that the CT6's transmission calibration is a work in progress; this is a relatively new GM-built eight-speed automatic, the same basic gearbox used in the Chevrolet Corvette, rather than the Aisin unit that Cadillac uses in the CTS Vsport.

→ The gauges and the image on the rearview mirror are computer simulations made to look like a mirror reflection and gauges.

The CT6's interior reinforces the kinship to the CTS, with a similar design theme using layered materials; it is a bit too busy for our taste. Our test car features not one but two different wood grains on its dashboard. Three different colors of leather cover various surfaces in the car, including a curious swath of perforated material that surrounds the infotainment screen and resembles seat leather. Even as Cadillac's exterior-design team seems to have nailed simple elegance, its interior people continue to try too hard.

At least the CUE system is improved, less from the addition of the new console-mounted touchpad than a reconfigured button field for the HVAC system. The instrumentation in our test car was fully digital, with electronic displays replicating



## CADILLAC CT6 3.0L TURBO PLATINUM AWD

### ▼ SPECIFICATIONS

PRICE	
AS TESTED (est)	\$89,000
BASE	\$88,460

**VEHICLE TYPE:** front-engine, 4-wheel-drive, 5-passenger, 4-door sedan

**OPTIONS:** Pirelli P Zero summer tires

**STANDARD:** power windows, seats, locks, and sunroof; remote locking; cruise control; tilting-and-telescoping steering wheel

**AUDIO SYSTEM:** satellite radio; CD player; DVD entertainment; media storage; minijack, 4 USB, media-card, and Bluetooth-audio inputs; Apple CarPlay and Android Auto interfaces; 34 speakers

**ENGINE**

twin-turbocharged and intercooled Miller-capable V-6, aluminum block and heads

**BORE X STROKE** ... 3.39 x 3.38 in, 86.0 x 85.8 mm

**DISPLACEMENT** ..... 182 cu in, 2990 cc

**COMPRESSION RATIO** ..... 9.8:1

**FUEL DELIVERY SYSTEM** ..... direct injection

**TURBOCHARGERS** ..... Mitsubishi TD04

**MAXIMUM BOOST PRESSURE** ..... 18.0 psi

**VALVE GEAR:** double overhead cams, 4 valves per cylinder, hydraulic lash adjusters, variable intake- and exhaust-valve timing

**REDLINE/FUEL CUTOFF** ..... 6000/6500 rpm

**POWER** ..... 404 hp @ 5700 rpm

**TORQUE** ..... 400 lb-ft @ 2500 rpm

**DRIVETRAIN** ..... AWD

**TRANSMISSION** ..... 8-speed automatic with manual shifting mode

**FINAL-DRIVE RATIO** ..... 3.27:1

**4-WHEEL-DRIVE SYSTEM** ..... full time with automatic front-axle engagement

GEAR	RATIO	MPH PER 1000 RPM	MAX SPEED IN GEAR (rpm)
1	4.56	5.4	35 mph (6500)
2	2.97	8.2	53 mph (6500)
3	2.08	11.8	77 mph (6500)
4	1.69	14.5	94 mph (6500)
5	1.27	19.3	125 mph (6500)
6	1.00	24.5	155 mph (6500)
7	0.85	28.8	155 mph (5400)
8	0.65	37.6	155 mph (4100)

**CHASSIS** ..... unit construction with a rubber-isolated rear subframe

**BODY MATERIAL:** steel and aluminum stampings

**STEERING** ..... rack-and-pinion with variable ratio and variable electric power assist

**RATIO** ..... 16.3-14.6:1

**TURNS LOCK-TO-LOCK** ..... 2.3

**TURNING CIRCLE CURB-TO-CURB** ..... 37.1 ft

**SUSPENSION** ..... F: ind; 1 control arm, 1 diagonal link, and 1 lateral link per side; coil springs; 3-position cockpit-adjustable electronically controlled magnetorheological dampers; anti-roll bar

R: ind; 2 diagonal links, 2 lateral links, and a tie rod per side; coil springs; 3-position cockpit-adjustable electronically controlled magnetorheological dampers; anti-roll bar

### EXTERIOR DIMENSIONS

**WHEELBASE** ..... 122.4 in

**LENGTH** ..... 204.1 in

**WIDTH** ..... 74.0 in

**HEIGHT** ..... 58.0 in

**FRONT TRACK** ..... 63.4 in

**REAR TRACK** ..... 64.0 in

**GROUND CLEARANCE** ..... 5.6 in

### INTERIOR DIMENSIONS

**SAE VOLUME** ..... F: 58 cu ft R: 50 cu ft

**TRUNK** ..... 15 cu ft

### BRAKES

F: 13.6 x 1.2-in vented disc

R: 12.4 x 0.9-in vented disc

**STABILITY CONTROL** ..... fully defeatable, traction off

### WHEELS AND TIRES

**WHEEL SIZE/CONSTRUCTION** ..... 8.5 x 20 in/ cast aluminum

**TIRES** ..... Pirelli P Zero, 245/40ZR-20 (99Y)

### ★ NOTABLE HIGHLIGHTS

Cadillac claims a 200-pound weight savings achieved by using 13 aluminum die castings in the unibody that's clad with aluminum exterior panels. These parts are joined with laser welds, self-piercing rivets, and adhesives. The CT6's twin-turbo V-6, though, weighs 33 pounds more than a 415-hp LS3 V-8.



analog gauges and allowing for some user customization as in other Cadillacs (a lesser trim level has real analog gauges). Another screen is built into the rearview mirror. Flip what seems like an old-fashioned lever you'd use to dim the glare of bright lights and the mirror switches to a wide, high-definition video image of what's behind you, fed by a rear camera. It's a novel trick, and while the Panavision-style view is undeniably useful,

↑ Cadillac is not eager to advertise it, but the designer responsible for the CT6's headlight clusters is an incurable Alice Cooper fan.

the proximity of the mirror makes it difficult to adjust your focus. The angle is wide enough that, to process its full resolution, the mirror begs to be moved a few inches farther from your eyes.

The CT6 puts up good-enough numbers to put plenty of traffic in that rear

camera lens, and from a brand-building perspective, this big sedan continues with Cadillac's practice of offering the best-handling luxury cars in the business. In fact, the CT6 completes Cadillac's trio of small, medium, and large sedans that now occupy the same space BMW did 15 years ago, delivering a consistent design with smart engineering and excellent dynamics in three sizes. We quite obviously liked that approach then, and we're glad to see Cadillac pursuing it now, in the face of all evidence that the crossover-consumed public has little appetite for it.

In 2015, Cadillac actually posted better numbers for the old, front-drive XTS than for the CTS, moving 3600 more of these jumbo mobility scooters than it did of our 10Best winner. If the front-driver, still popular as a livery car, weren't selling so well, Cadillac would happily cancel it in favor of the CT6. Yes, our Platinum test car's pricing is a bit dear, yet the end of Old Cadillac still needs to happen. On Cadillac's long, quite possibly endless march back to relevance among buyers at the sharp end of the market, the CT6 is a confident step forward. ■

## CAR AND DRIVER TEST RESULTS

### ACCELERATION

ZERO TO	SECONDS
30 MPH	1.7
40 MPH	2.7
50 MPH	3.8
<b>60 MPH</b>	<b>5.0</b>
70 MPH	6.3
80 MPH	7.9
90 MPH	9.9
<b>100 MPH</b>	<b>12.2</b>
110 MPH	14.7
120 MPH	18.1
130 MPH	22.0
140 MPH	26.6
ROLLING START, 5-60 MPH	6.7
TOP GEAR, 30-50 MPH	3.1
TOP GEAR, 50-70 MPH	3.5
<b>1/4-MILE</b>	<b>13.5 sec @ 105 mph</b>
TOP SPEED (GOV LTD, C/D EST)	155 mph

**TEST NOTES:** There's major turbo lag in the rolling 5-60 run. Stomp the accelerator and not much happens; the V-6 takes its sweet time building boost and rpm. Holding the engine against the brake mitigates lag by allowing the engine to build boost before the launch.

### WEIGHT

CURB	4371 lb
PER HORSEPOWER	10.8 lb
DISTRIBUTION	F: 52.9% R: 47.1%
TOWING CAPACITY	0 lb

### INTERIOR SOUND LEVEL

IDLE	49 dBA
FULL THROTTLE	73 dBA
70-MPH CRUISING	64 dBA

### BRAKING, 70-TO-ZERO MPH

FIRST STOP	162 ft
<b>SHORTEST STOP</b>	<b>152 ft</b>
LONGEST STOP	162 ft
FADE RATING	NONE

**TEST NOTES:** Firm and satisfying pedal feel. Six successive stops from 70 mph didn't faze the CT6's brakes at all; decelerating from 140 mph was taken in stride and without any smoky drama. Brake dive, the propensity of the nose to sink under braking, is well controlled.

### HANDLING

ROADHOLDING, 300-FT-DIA SKIDPAD	0.86 g
UNDERSTEER	MODERATE

**TEST NOTES:** Impressive body control, but with less bite than the smaller CTS. Steering feedback at the limit is similarly diminished. Progressive understeer is most apparent on the skidpad, despite the rear-wheel steering compensating for the inherent push.

### FUEL

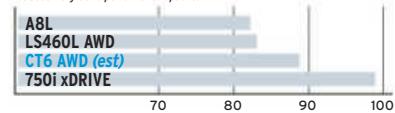
CAPACITY	19.2 gal
OCTANE	91 required
EPA CITY/HWY	18/26 mpg (mfr's est)
<b>C/D OBSERVED</b>	<b>17 mpg</b>

tested by TONY QUIROGA  
in California City, California

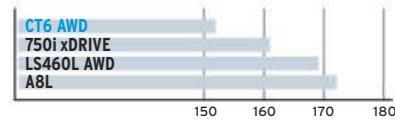
### ▼ COMPETITORS

AUDI A8L (3.0-LITER V-6, 333 HP, 8-SP AUTO)  
BMW 750i xDRIVE (4.4-LITER V-8, 445 HP, 8-SP AUTO)  
**CADILLAC CT6 PLATINUM AWD**  
(3.0-LITER V-6, 404 HP, 8-SP AUTO)  
LEXUS LS460L AWD (4.6-LITER V-8, 386 HP, 8-SP AUTO)

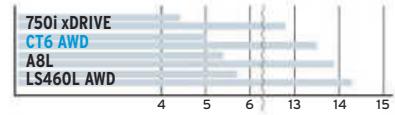
**CURRENT BASE PRICE** dollars x 1000  
Includes freight and performance options.



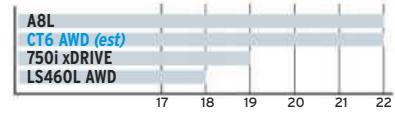
### 70-0 BRAKING feet



### ACCELERATION 0-60 & 1/4-mile, seconds



### FUEL ECONOMY EPA combined mpg



Shell V-Power

NITRO+

Premium Gasoline

The Official Fuel of  
CAR AND DRIVER



# JAGUAR F-PACE PROTOTYPE DRIVE

## WHILE WE MIGHT NOT BE LEARNING MUCH ABOUT HOW THE NEW F-PACE WILL DEAL WITH THE CHALLENGES TYPICALLY FACED BY LUXURY CROSSOVERS, WE'RE CERTAINLY HAVING FUN.

065



by MIKE DUFF

Jaguar Land Rover's test facility near Arjeplog in northern Sweden is only 35 miles south of the Arctic Circle, and in the winter, every surface of this place is covered in either snow or ice. Or, in the case of the 300-foot-diameter circle on the frozen lake around which we're drifting a prototype F-Pace, a combination of both. Although it's barely past noon, the sun hangs just above the horizon and is

about to disappear, and the outside temperature is a bracing -22 degrees Fahrenheit. Yet this supercharged V-6 F-Pace seems entirely happy to slide around indefinitely, the cabin staying warm and the well-mannered chassis politely declining every invitation to spin out. This despite the provocation of a pinned-open throttle and the deactivation of every dynamic aid.

It's a memorable introduction, and it's fair to say that our first experience with the F-Pace is highly positive. But

after a day in various prototypes, many questions remained, at best, partially answered, and not due to any enforced restrictions or signed-in-blood nondisclosure agreements. Rather, it's because we can only report how the F-Pace deals with various types of slick surfaces. Because while JLR's Revi Test Center has nearly 40 miles of tracks and courses, most of them are built on the surface of a frozen lake. Not a single yard of today's driving route is formed from anything other than frozen water.

The circuits include a three-quarter-mile course in the shape of Jaguar's "leaper" mascot that's been marked out exclusively for our visit. Cute.

We expect that, when driven on a dry road, the F-Pace will manifest some steering feel. In Sweden, however, combining winter tires and a surface with a friction coefficient no higher than butter on linoleum means the steering displayed all the feedback and resistance of an early 1980s arcade racing game. Similarly, we can extrapolate little from the way it rode over Revi's glassy-smooth surfaces. Also, we didn't get to experience the brakes under anything beyond the juddering retardation of a full ABS deployment. What we can confirm, though, is that the F-Pace feels exciting in a way that very few of its rivals do. Actually, just one of its competitors.

Yes, Porsche should be very flattered, and the Jaguar development team admits as much. The Macan came to market after F-Pace engineering was already well underway, and that Porsche led Jag to the uncomfortable realization that it was good enough to effectively reset the segment's benchmarks. Jaguar was originally targeting the BMW X3, but the Macan forced it to pause the F-Pace program for several months while it retuned the suspension, adding firmer springs and anti-roll bars. It's also when, according to the development team, the F-Pace went from being a run-of-the-mill premium SUV to what's actually a very sporty crossover.

Not that such a modest delay means much in the overall scheme of things. The F-Pace could be charitably described as a decade behind the rest of the luxury-ute segment. Jaguar's partnership with an existing and highly successful SUV specialist (the LR of JLR) gives some excuse for such tardiness, but probably not much consolation to those dealers who have been trying to sell the company's existing lineup to people who really want one of those spiffy new luxury crossovers. To get away with being this late to a party, you have to either sneak in very quietly or make a grand entrance.

Describing the F-Pace as the jacked-up-wagon version of the newly introduced XF would not be entirely unfair. The two sit on the same mostly aluminum platform and share large amounts of sub-surface structure. Jaguar admits that, from the B-pillars forward, the body-in-white of both vehicles is largely the same, although the F-Pace gets a new front subframe for its longer-travel front suspension. Power will come from the usual suspects, with U.S. F-Paces mostly getting the 380-hp 3.0-liter supercharged V-6 we experienced in Sweden as well as a downturned 340-hp version. We also had a turn in the Euro-spec 3.0-liter V-6 diesel. Four-cylinder gas and diesel engines will follow, though the U.S. won't see the gas four, and some markets will have the options of rear-drive and manual gearboxes. U.S. F-Paces are likely to be exclusively available with Jaguar's four-wheel-drive

## ▼ SPECIFICATIONS

<b>VEHICLE TYPE:</b>	front-engine, 4-wheel-drive, 5-passenger, 4-door hatchback
<b>BASE PRICE</b>	\$41,985-\$70,695
<b>ENGINES:</b>	turbocharged and intercooled DOHC 16-valve 2.0-liter diesel inline-4, 180 hp, 318 lb-ft; supercharged and intercooled DOHC 24-valve 3.0-liter V-6, 340 or 380 hp, 332 lb-ft
<b>TRANSMISSION:</b>	8-speed automatic with manual shifting mode
<b>DIMENSIONS</b>	
<b>WHEELBASE</b>	113.1 in
<b>LENGTH</b>	186.3 in
<b>WIDTH</b>	76.2 in
<b>HEIGHT</b>	65.0-65.6 in
<b>PASSENGER VOLUME</b>	96 cu ft
<b>CARGO VOLUME</b>	34 cu ft
<b>CURB WEIGHT</b>	4150-4200 lb
<b>PERFORMANCE (C/D EST)</b>	
<b>ZERO TO 60 MPH</b>	4.9-7.8 sec
<b>ZERO TO 100 MPH</b>	11.9-20.0 sec
<b>1/4-MILE</b>	13.6-15.8 sec
<b>TOP SPEED</b>	129-155 mph
<b>FUEL ECONOMY (C/D EST)</b>	
<b>EPA CITY/HWY</b>	18-23/26-30 mpg

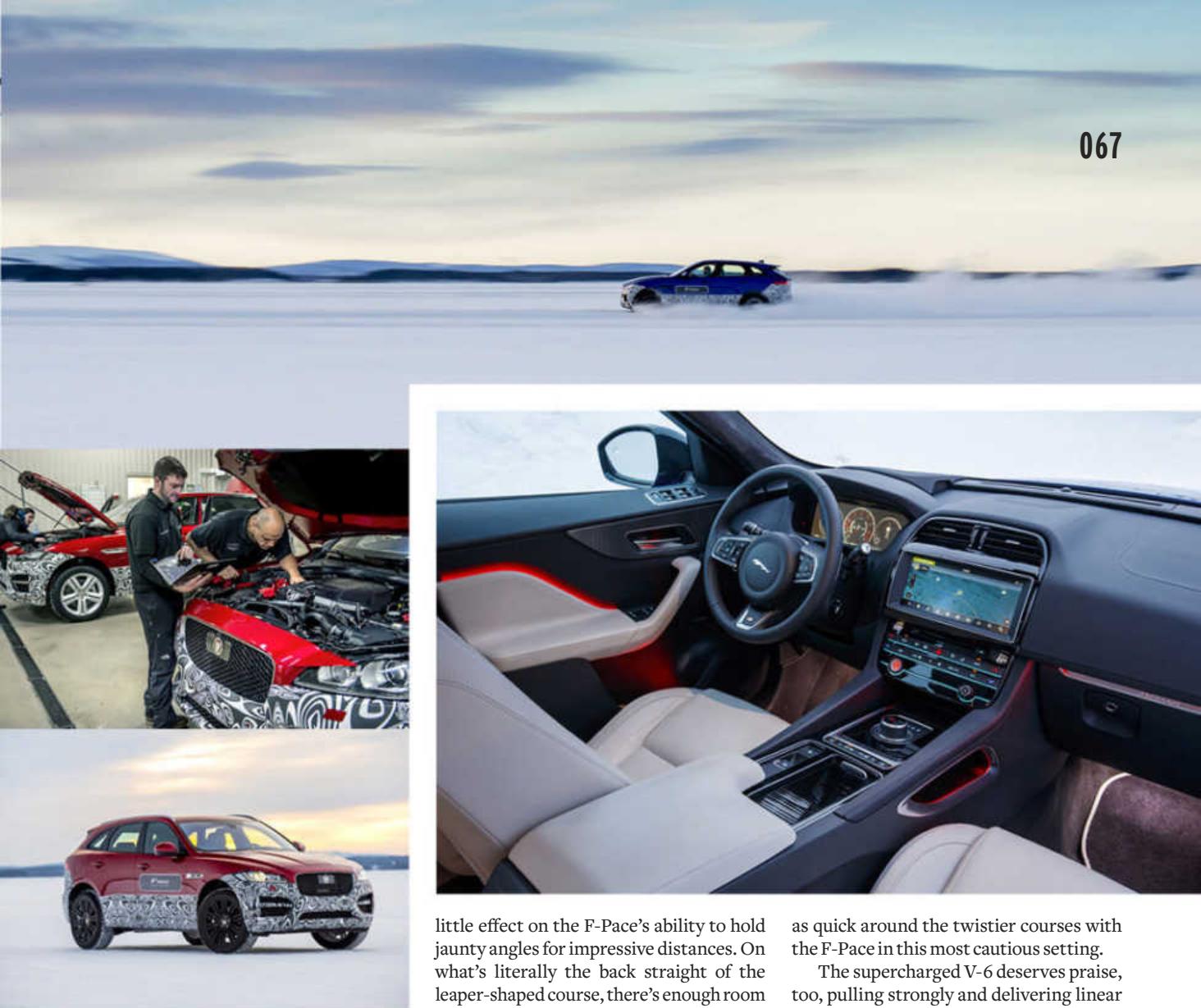
system (beefed up from its XF and F-type applications with a bigger front differential) and an eight-speed automatic.

Other mechanical components are familiar and appreciated, including the front control-arm suspension and the multilink rear axle, which are both closely related to those in the XE and XF. Jaguar claims a respectable 8.4 inches of ground clearance, but the F-Pace does without air springs and only the top-spec versions have adjustable dampers. Variable-ratio electrically assisted power steering is standard.

Ian Callum, Jaguar's design director, doesn't really do straight lines, and the F-Pace is as curvaceous as any of his sports cars. Still, the partial disguise worn by the prototype versions we drove served to emphasize how fundamentally wagon-y the F-Pace's lines and dimensions are. Callum's enthusiasm for big wheels is equally well-known, and the production F-Pace will be available on up to 22-inch rims. Despite wearing Continental winter tires, the prototypes we drove were still packing 20-inch aluminum wheels.

With temperatures cold enough to freeze nasal hair in seconds, we didn't linger to admire the exterior design. We did, however, take positive note of the F-type-ish taillights and rear deck. The cabin feels like an XF's on stilts—the switchgear and design ethos are clearly shared between the two. The fat center console is home to Jaguar's familiar rotary gear selector, with high-spec versions getting both a TFT instrument pack and a vast, 10.2-inch touchscreen in the center of the dashboard. Sweden reveals one flaw: The thick door-panel trim and low-mounted air vents make it difficult to keep the side windows frost-free in these Arctic conditions. Despite having been warned that these are





↑ Above: Here's the V-6 diesel we won't get. Right: The 10.2-inch InControl Touch Pro is the larger of two new navigation interfaces.

working prototype vehicles, everything felt finished to an impressively high standard.

With an abundance of power and limited grip to apply it, there's plenty of opportunity to experience a handling balance that's as benign as one of Charles Dickens's more avuncular characters. As in Jaguar's existing four-wheel-drivers, most output heads rearward until a yaw sensor detects slip, at which point torque is diverted to the planted end to help pull the car back onto your intended line. Or, at least, something closer to your intended line. On ice, and in the more aggressive driving modes, there's a distinct pause before the front axle steps in to do its bit; even in the default normal mode, the rear end will slide slightly. Switching to dynamic mode, or turning the stability control down or off, produces progressively more of this power-on oversteer, with the lack of a locking differential having

little effect on the F-Pace's ability to hold jaunty angles for impressive distances. On what's literally the back straight of the leaper-shaped course, there's enough room to confirm that, even after building up to an indicated 75 mph, the F-Pace with its stability-control system switched off is still happily (and predictably) clawing its way sideways down the straight.

All of which is fun, but only relevant for those who attempt extreme acts of driving heroics in the wet or on ice. And it's actually when it's in the cautious Adaptive Surface Response (AdSR) mode that the F-Pace impresses most. Jaguar's chassis team developed AdSR, a system that replaces winter mode and takes input from various sensors to work out approximate grip levels on low-adhesion surfaces before you even turn the steering wheel—and then helps you make the best of that situation. There's none of the adrenaline-spiking slip of the punchier modes, and throttle response slackens enough to make you feel as if a length of elastic has been slipped into the mechanism. But the system works quietly to minimize understeer and smooth acceleration without obvious intervention. It's an ego blow to realize that we're practically

as quick around the twistier courses with the F-Pace in this most cautious setting.

The supercharged V-6 deserves praise, too, pulling strongly and delivering linear responses pretty much throughout its broad power band. (The V-6 diesel, although far torquier, feels peaky by comparison and has a far more industrial soundtrack, so we won't miss it much.) The eight-speed gearbox shifts cleanly and, in dynamic mode, intelligently under hard use, with the ability to override shift logic via paddles behind the steering wheel. Even switching between gears while drifting under full power isn't an issue.

The F-Pace has another less exciting weapon to use against the Macan: practicality. The rear seat is noticeably larger than the Porsche's, and luggage volume is nearly twice as large. These things matter, at least as much as the ability to go sideways on a frozen lake. For a vehicle that we've been told marks a radical departure for the automaker, the F-Pace feels reassuringly Jaguar-like and athletic up close. And while there are still many unanswered questions, including why we have waited so long for a crossover the market has been clamoring for, the first impressions are excellent. ■



*feature .*

# GROWING THE SUPER GOLD FUTURE

069

MEET THE SILICON VALLEY  
MESSIAH WHO IS TAKING THE  
CAR BACK TO THE GARDEN.

by JOHN PEARLEY HUFFMAN  
photography by SCOTT G. TOEPPER



## THE RIPE, GOLDEN APRICOT fit perfectly in my palm. “That’s the future of the automobile in your hand,” says Nygård Lünd. “Didn’t think it would feel fuzzy, did you?”

Not any more than the bro hug I just got from this billionaire in the midst of a tour of his backyard orchard. But that’s where I found myself the target of a spontaneous embrace, the fruit still in my hand. Lünd, the six-foot-eight 47-year-old currently grabbing me, wants to reinvent the world, which predictably enough starts with completely reinventing the car.

“Have you ever seen one of those science-fair demos where some kid powers an electric clock with a watermelon or whatever?” Lünd asks. “Well, we’ve taken that idea and magnified it.”

I first spotted him six months ago; before that, no one but those in his close circle of associates even knew he existed. In my own moment of spontaneity I had thought to drive by the Honda Proving Center of California (HPCC) in the Mojave Desert near California City. I once took a Ferrari F355 up to 180 mph there—the fastest I’ve ever gone—so the place means something to me. Yet despite the 4255 acres of prime vehicle-testing assets, Honda walked away from HPCC back in 2010 and it had been for sale for the last few years.

I drove along the access road past the jack rabbits and tumbleweeds until what once was the administration building came into view. Beyond the chain-link fence was a cluster of white vehicles: four box trucks, two pickups, and a pair of enclosed car haulers off in the distance. That’s an awful lot of hardware for a place where nothing was supposed to be happening. Shambling between the guys in jeans and golf shirts was the man who would later hug me. He was wearing his usual bathrobe, which, not yet knowing him, I mistook for a coat. He was making the gestures of command as what seemed like a car emerged from the back of one of the carriers. It wasn’t much more than a hazy black shape from where I stood. If forced to describe it, I’d say it looked like the back halves of two matte-black 1972 AMC Hornet Sportabouts welded together and left to unevenly melt under a heat lamp. I raised my iPhone and got off one photo before I was spotted and the vehicle was hustled

back into its trailer cocoon. Suddenly, a third pickup was headed my way down the access road, and the guys inside looked mean. So I bolted. I might have even forgotten about the incident, as my spy photo was too short on detail for anything beyond lobbing wild guesses about the goings-on behind the fence.

They didn’t know that when they tracked me down last month. The call came from Dale Carmichael, who I would later learn is Lünd’s “left-hand man” (the billionaire is actually ambidextrous but insists on using the phrase opposite convention). Carmichael was polite but determined to know if I’d seen anything that might compromise the secrecy of Lünd’s operation, and I was able to negotiate some tentative access.

IT WAS DECIDED THAT I WOULD be invited to Lünd’s home, in the town of Atherton, the Beverly Hills of Silicon Valley. It’s where billionaire homesteaders knock down huge mansions to build monstrous ones. At Carmichael’s direction, I was to meet him on a residential street corner.

“Can I help you?” Carmichael says as I pull up in my old Toyota Tundra. He speaks with the faux friendliness that comes from a career in public relations, standing alone in the road, the sort of undersized white guy who probably came out of the womb business-card first, wearing khakis.

“I’m with *Car and Driver*,” I reply.

“You know this whole street is private property,” he says as he climbs aboard, pointing for me to make a left turn. “Piltdown Road, but any evidence of that name is long gone.”

He smiles, then smirks, then continues, “It doesn’t even show up on Google Maps.”

More a lane than road, Piltdown is about three blocks of broken pavement and mossy sidewalks lined with a dozen large, ranch-style houses that look as if they were all built during one weekend in 1967. I drive to where it ends in a cul-de-sac. We get out and walk up to house number 1255, where I am told Lünd both lives and works. I notice that my phone has lost contact with the cell network. When I check to see if there is any Wi-Fi around, more than 60 networks show up, none of which are accessible. Carmichael purses his lips and says: “I’ll need the phone this time. Nothing personal, but Nygård doesn’t like being recorded.”

I am offered an original iPod hooked to a pair of Noble Audio Kaiser 10U in-ear monitors in trade. “Please listen to this,” he

explains. “The boss doesn’t want you overhearing any stray conversations.” What I am subjected to is French singer Françoise Hardy at full volume. Carmichael says something to me I can’t hear until I remove one of the earbuds. “The boss is kind of obsessed with Françoise Hardy. You know she was in *Grand Prix* with James Garner.”

The door to the house swings open, and I get my first sight of the superhuman Nygård Lünd. Who, at that moment, I still didn’t know was Nygård Lünd. Or who Nygård Lünd was anyhow. He is in the process of painting his toenails. Carmichael says in his implacably calm voice, “Mr. Lünd does not wear shoes.”

The house is full of people hunched over laptops, hunched over drawing tables, or hunched over lunch. No one seems to be



talking to anyone else, so I'm not sure why Lünd was panicked about me hearing anything. We walk to a back patio that overlooks a large greenhouse and an orchard, where he motions for me to pick the aluminum buds out of my ears. I introduce myself.

"I'll call you Pearley!" he chortles a little. I'm okay with that, since it's my name. "I'm Nygård."

He looks me up and down before stating: "I guess you're about as good as anyone to tell the world what we've been working on here. It's totally badass. I swear, you're going to love this shit."

I'm trained not to embrace shit too quickly. But I've also been taught to seek out the badass.

According to a June 1992 article in *Wired*, Nygård Lünd emigrated from Norway in 1987 to attend the computer-science program at the University of Illinois at Urbana-Champaign. He soon found himself at the center of what would become the World Wide Web, counting among his peers one Marc Andreessen, who would co-develop Mosaic, the first internet browser. Lünd was instrumental in defining the early parameters of the internet. As a student, he served as a kind of modern Thomas A. Watson to Tim Berners-Lee's Alexander Graham Bell in creating the "404 Not Found" error message that you see whenever you hit an internet dead-end. Lünd won't say whether every 404 error makes him a little richer, but he also won't deny it.

Carmichael pulls his boss's left ear down to his level and whispers into it. "He tells me I shouldn't show you anything that we don't have secure intellectual property rights to," Lünd explains. "And that's a lot. But I've still got plenty to show off."

With that he walks me through the back door of the garage. When the lights go on, what's before me is an advanced version of what I saw being unloaded at the Honda proving grounds. It's made of a milk-chocolate-colored carbon-and-silicon ceramic and sits atop four 22-inch composite wheels. And there is no windshield, nor any windows. "I'm bummed we're still using wheels," Lünd explains. "We've changed everything else, but as long as it's on wheels it still looks like a car. Mostly. But what else could we do—design a flying car?"

Except that this is just a mock-up, I am told. "But it's logical for it to look like this," says Lünd. For the moment, he's calling it Françoise after his favorite French singer. "I'm sure we'll end up naming it something stupid like the FTA-390 or EI-EI-O," he says. "The market fairly demands it." Lünd tells me he was going to call it the Prunus, but decided that would be kind of stupid. "So for now, it's Françoise," he says.

SINCE THAT SHORT ARTICLE IN WIRED, nothing has been written about Lünd, which is as he wants it to be. He likely qualifies for the Forbes 400 list of richest Americans, but he says he has gone to great lengths to ensure "they keep overlooking me." Neither the *Wall Street Journal* nor the *New York Times* shows anything about

him in their online databases. But Lünd has been in Silicon Valley for more than 25 years, a naturalized American citizen since 1992. His wealth magnified with low-key but prescient investments, he has also built a network of friends in places high and low who help protect his privacy.

Lünd is hardly the only mogul who has bought up his own neighborhood to ensure privacy. But he's the only one who has turned those accumulated houses into a top-secret, leading-edge research-and-development facility, with each home dedicated to one particular engineering discipline. Each also houses many of the engineers. "To our left is design and ergonomics," Carmichael points out, while Lünd ducks into one of the structures. "All the powertrain engineers are on our right. We're doing nothing but computational fluid dynamics three doors down across the street. The supercomputer in there is so powerful that it's cooled by an air-conditioning system that takes up most of the house next door."

Carmichael mentions that most of the heat-exchanger components in the cooling house came from the Seattle Kingdome before it was imploded back in 2000. When I ask, shocked, whether that means they've been working on this project in secret for more than 15 years, Carmichael pastes on another of his strange facial expressions and says, "Remind me to make sure Nygård shows you his orchids."

Lünd rejoins us and resumes explaining his creation. "It looks like carbon fiber, but it's more like a carbon-reinforced silicon-glass extrusion. To oversimplify, I put some sand and carbon in one end of a machine and out through a die comes a warm, thin sheet of tacky stock. It's kind of like a high-tensile-strength Frito. The sheets can be layered and pressed into practically any shape. Plus it doesn't need paint, and it deforms in a controlled, predictable way. So it's great in crashes. And you can wax it with olive oil. Swear to God. It shines right up."

They tell me a Chinese factory is making monocoque tubs out of the stuff right now. It is as light as carbon fiber, easier to work with than aluminum, and cheaper than steel. "We can stack them up like Dixie cups and ship out of Shanghai to anywhere," says Lünd. "We won't have an assembly plant per se, but a dispersed production model. Bringing in the best stuff from around the world and assembling it near where the end-user resides."

The Françoise is electric, with a motor inside each wheel, and an organic lattice-over-substrate power-storage system that leaps beyond lithium-ion batteries or whatever else LG is brewing up in its labs. "Every ion is my friend," Lünd avows. "It's almost a matter of willing each subatomic particle to do what you want. I haven't gotten past the laws of physics yet. But I'm getting pretty close." With that he takes a fistful of pistachios out of one robe pocket and cracks open a couple and pops them in his mouth. He puts the empty shells in the other pocket.

"Yeah, that's fascinating," I say. "But how do you see out of it?"



**LÜND IS HARDLY  
THE ONLY MOGUL WHO  
HAS BOUGHT UP  
HIS OWN  
NEIGHBORHOOD TO  
ENSURE PRIVACY.  
BUT HE'S THE ONLY  
ONE WHO HAS TURNED  
THOSE HOUSES  
INTO A LEADING-EDGE  
RESEARCH-  
AND-DEVELOPMENT  
FACILITY.**

"Oh, you're going to dig this," he gushes. Instead of a conventional windshield, the prototype uses a thin film of "correlated metals"—conductors such as strontium vanadate, which can be either transparent or display whatever information is needed by the driver. There is no traditional dashboard or instrumentation. It's like the view screen on the Starship Enterprise. "I'm not even trying to do autonomous driving," Lünd says. "I'll let Google and Apple drill down into that rathole. But with the correlated-metal display, I can put anything I like in front of the occupants. If I do go ahead and buy Google's autonomous software, I can use the screen to play movies in VistaVision."

But whatever great leaps in material science that Lünd is pioneering, it's the bio-electric energy-storage system that is most astonishing. The energy to power his car is stored in genetically engineered hybrid versions of the South African Super Gold apricot. Originally a cross between the Peeka and Pal-steyn varieties, the Super Gold was first released in 1986. With its high sugar content, the meat of the fruit is structured almost like a battery cell and is capable of holding a charge. "Plus apricot pits have cyanide in them to regulate electrical discharge," Lünd explains. Applying a charge at somewhere near 14 volts, the fruit will keep generating electricity by consuming the sugars that are already there.

"I have to deal with the reality of thermodynamics," Lünd says. "But the Super Gold pit will regulate the sugar consumption so free protons and electrons will resonate in a steady state. Once the apricot is charged, the only challenge is getting electricity back out."

The charged apricots are held in a tank of electrolytic fluid (think: Gatorade). As their charge is released through the lattice grid of copper and superconductive wiring at the bottom of the tank, the apricots get lighter, shrivel up, and float to the top. Once spent of their charge, it's a simple matter to skim them off the top and reload the tank with fresh fruit. "Right now Françoise will run 240 miles at cruising speeds on a few dozen apricots," says Lünd. "And then it only takes four minutes to swap them out."

As promised, I am shown the orchids. Lünd has been using the spent fruit from his research to fertilize them, magnificent flowers with massive blooms so colorful they practically rip through your eyes. My tour of his hothouse reveals flowers in glorious oranges, purples, and reds that seem four or five chromatic steps beyond nature. "I've been reluctant to enter any of the orchid shows," Lünd says. "But I think by the time the Pacific Orchid Exposition comes around in February 2017, I'll have some potential champions."

LEAVE ALL THAT FOR THE FLOWER MAGAZINES. What I wanted was access to Françoise. "We don't have a complete car yet," Lünd explains. "And I'm not going to let you photograph some half-ass prototype. But I can give you a drive so you can get a feel for where we're aiming."



**LÜND HAS BEEN  
USING THE SPENT  
FRUIT FROM HIS  
RESEARCH TO GROW  
THEM, MAGNIFICENT  
FLOWERS WITH  
MASSIVE BLOOMS  
SO COLORFUL THEY  
PRACTICALLY RIP  
THROUGH YOUR EYES.**

The mule is actually a vintage Mercedes 300D, equipped with in-wheel motors and a few large boxes made of the "chocolate-fiber" material bolted into the back seat, spilling forth various hoses and wires. I find no hidden batteries or combustion engine of any sort, and the relatively stripped condition of the car, with only the front half of its interior intact, makes my search for chicanery easy. A large, trunk-mounted tank holds the apricot slurry.

We leave Carmichael at the curb, and Lünd and I travel down Piltdown Road, cruising through Atherton and Menlo Park, then over to Palo Alto and onto the campus of Stanford University. While the drivetrain is beyond high tech, Françoise goes old school in using mostly mechanical connections between the driver and the car. "Steering wheels work great," Lünd tells me. "I like the feel of a direct connection between the steering and what's going on with the tires. And since there are computer-controlled motors at every wheel, I can simulate almost any driving experience. I've got one program that has the car performing exactly like a 1977 Cadillac Sedan DeVille, for instance. My favorite program so far has perfectly re-created the sensations of driving a 1970 Porsche 911S."

Except for the sound of the apricots sloshing around in the electrolyte solution, the Mercedes driving experience is big and sort of numb. What's most impressive is the sensation of tenacious traction, instantaneous thrust, and instinctive steering. Is it a real driving sensation or a clever computer simulation? At some point does it really matter? Lünd later explains that the car was mistakenly running the 1991 Dodge Stealth R/T program when we were piloting it. No wonder it felt so heavy.

There's every reason to believe that Lünd's dream may only be so much vapor in a world already filled with vapor. With Lünd sitting next to me in that old Benz, the California autumn sun shining in through the open sunroof, his vision is seductive: Water and the sun, not oil and batteries, are what power this vision of the future car. He offers no timeline for production, no marketing or pricing schemes. But those details probably don't concern a guy who has a room in his house dedicated to nothing but contemplating the universe an hour every day. "Science is fine as far as it goes," Lünd says. "But I'm not giving up hope for a sudden burst of inspiration. Whether that comes from God or a synaptic blowout, I don't care. I'm trying to cover all the bases."

As I get into my Tundra with that apricot in my hand, I can't resist picking off the skin and taking a bite. Nygård Lünd's dream for the car may not become reality, but it sure is delicious. ■

WATCH  
FOR 7 DAYS  
**FREE!**

# WANT TO PAY LESS FOR LIVE TV?

Get the Best of Live TV, including ESPN,  
**For only \$20/mo.** with no annual contract.



## GET THE LIVE TV YOU WANT.



## AT A PRICE YOU'LL LOVE.

- **ONLY \$20/mo.**
- **NO** Annual Contract
- **NO** Installation Nightmares
- **NO** Catch, No Kidding

## CHECK OUT THE LINEUP:

**Sling's Best of Live TV Package:**  
only \$20/mo.



## WANT MORE? NO PROBLEM.

- Add **HBO** for only \$15/mo!
- Add **Sports Extra** for only \$5/mo!
- Add **Kids Extra** for only \$5/mo!
- Add **Hollywood Extra** for only \$5/mo!

LIVE TV ANYTIME, ANYWHERE ON YOUR FAVORITE DEVICES



nexus player

## WATCH FOR 7 DAYS FREE!

**sling.com/buysling20 or 1.888.397.2410**

**Promotional Offers:** **Free trial:** Available to new customers upon account activation. One per customer and cannot be combined. Must provide email address and credit card. HBO® may not be included in free trial. **Billing and Cancellation:** After any promotional period your credit card will be charged monthly for applicable subscription until you cancel your service. Cancel on Sling.com or by calling 1 (888) 309-0838. Programming fees are charged monthly in advance and no credits or refunds will be issued for partial or prepaid months after cancellation. **Equipment Requirements:** Requires Internet-connected compatible device. Compatible devices include: PC or Mac, Roku, iOS 7.0 and higher, Android 4.0.3, Amazon Fire TV, Amazon Fire Stick, Google Nexus, Xbox One and Chromecast. **Miscellaneous:** Access on one device (1 stream) is included in the monthly programming package price (except HBO, which includes 3 streams). Certain programs may be unavailable due to programmer restrictions or blackouts. Only available within the United States. State and local taxes apply. All prices, fees, charges, packages, programming, features, functionality and offers subject to change without notice. Other restrictions may apply. See Sling.com website for details. **Offer ends 5/31/16.** ESPN and ESPN2 are registered trademarks of ESPN, Inc. ©Disney. All Rights Reserved. All trademarks are the property of their respective owners. HBO® and related channels and service marks are the property of Home Box Office, Inc. CNN, CN Cartoon Network, TBS, & TNT logos are trademarks of Turner Broadcasting System, Inc. A Time Warner Company. All Rights Reserved. ©2016 Sling TV LLC. All rights reserved.



# BUILT BY MECHANIX



FASTFIT®  
ELASTIC CUFF

ORIGINAL®  
SEAMLESS  
PALM

M-PACT®  
IMPACT  
PROTECTION

**THE TOOL THAT FITS LIKE A GLOVE®**

US: 800.222.4296 | [WWW.MECHANIX.COM](http://WWW.MECHANIX.COM)

#mechanix



## LONG-TERM TEST

075

— 2015 SUBARU WRX PREMIUM —

075

# Some Like It Rough



The fourth-generation Subaru WRX is better on pavement than ever before. But it doesn't forsake its rally-car rawness. *by Eric Tingwall*

**It was a fitting send-off.** Michigan's late-hitting winter finally spilled a couple of inches of snow on the December day that our 2015 Subaru WRX's odometer rolled past 40,000 miles. As the WRX slid over acres of

asphalt anchoring a shuttered auto-parts factory, the flat-four engine bounced off the rev limiter, the tires and the nose pointed in opposite directions, and visions of World Rally Championship heroics flashed across our Persols.

After 40,000 miles of road trips and commutes, a blanket of snow was a welcome reminder that the WRX still shines brightest in the sloppiest conditions. It's an easy thing to forget; the latest WRX feels more at home on the road than any of



its predecessors. So we were comforted by how our final sideways fling in the rally-inspired four-door proves that, even as it grows more civilized on the road, the WRX remains true to the character that makes it distinctive.

We began our WRX rendezvous in late July 2014 with a Premium model painted Lightning Red. Subaru had rattled the faithful by announcing that there wouldn't be a hatchback body for the fourth-generation WRX and that a continuously variable automatic transmission would be offered. We steered clear of the latter controversy by equipping our sedan with a traditional six-speed manual. The mid-level Premium trim added heated front seats and exterior mirrors, a sunroof, fog lights, and the subtlest rear spoiler ever to grace a WRX. Our only option was a \$2000 navigation system paired with a nine-speaker Harman/Kardon audio system.

While the window sticker read \$31,290, our WRX never felt that rich on the inside.

Per Subaru tradition, the plastic industry's hardest and glossiest stuff gets installed, building on a design theme that's best described as generic. That's just a quibble compared with the useless infotainment system, though. Its tiny touchscreen buttons, cryptic menu arrangements, and pixelated graphics antagonized every driver who took the wheel. There's also no evidence that anyone on our staff successfully used the navigation system to travel from point A to B. Subaru has already addressed this for 2016 with a new head unit that brings normally sized buttons, a tuning knob, and graphics that are at least more 2008 than 1998.

Comfortable seats, an excellent driving position, and a sculpted steering wheel reveal Subaru's priorities with this car. It's important to understand that you aren't buying luxury or even common modern conveniences with a WRX. Our car notably

Driving a winter-tire-shod WRX on the snow is one of life's big pleasures. Our WRX wore the excellent Bridgestone Blizzak WS80 model.

lacked three-blink turn signals, automatic headlights, and a trunk release on the outside of the car.

Instead, you're buying a permanent season pass to a rowdy, grin-inducing thrill ride. Despite the adoption of electric power steering, the feel has improved. The vague on-center slop of prior WRXs is gone, and a new brake-based torque-vectoring scheme keeps understeer in check. We witnessed 0.91 g of lateral grip on the skidpad and imperturbable body control everywhere we drove. The WRX's short-travel suspension is firm enough that you could read Braille with it, yet the staff was divided on the car's ride quality. Some drivers praised the progressive damping that dulls harsh impacts, while the naysayers argued that the ride was simply too busy.

Rough edges are a WRX hallmark. Some owners might even argue that they're pluses. They certainly place the WRX's party-boy image in stark contrast with the strait-laced Volkswagen GTI. But hard plastics and a loud cabin are trivial sacri-



# 2015 SUBARU WRX PREMIUM

## ▼ SPECIFICATIONS

VEHICLE TYPE:	front-engine, 4-wheel-drive, 5-passenger, 4-door sedan
PRICE AS TESTED	\$31,290
BASE PRICE	\$29,290
ENGINE TYPE:	turbocharged and intercooled DOHC 16-valve flat-4, aluminum block and heads, direct fuel injection
DISPLACEMENT	122 cu in, 1998 cc
POWER	268 hp @ 5600 rpm
TORQUE	258 lb-ft @ 2000 rpm
TRANSMISSION	6-speed manual
WHEELBASE	104.3 in
LENGTH	180.9 in
WIDTH	70.7 in
HEIGHT	58.1 in
PASSENGER VOLUME	93 cu ft
CARGO VOLUME	12 cu ft
CURB WEIGHT	3339 lb

### WARRANTY

3 years/36,000 miles bumper to bumper  
5 years/60,000 miles powertrain  
5 years/unlimited miles corrosion protection  
3 years/36,000 miles roadside assistance

### MODEL-YEAR CHANGES

**2016:** Subaru's Starlink infotainment system replaces the old, clumsy unit. Lane-keeping assistance, blind-spot monitoring, and rear cross-traffic alert are optional. Premium and Limited models now come with 18-inch wheels.

fices for this combination of cheap power, four-wheel drive, and juvenile fun.

Take the gruff, 268-hp flat-four as an example. The direct-injected engine gurgles its way to redline and groans at highway speeds, yet its performance easily compensates for any and all NVH sins. We averaged 25 mpg during our test, beating the EPA combined figure by one. If you can stomach the thought of a redline clutch drop, the WRX will charge to 60 mph in 5.0 seconds. It's the closest facsimile of a Porsche 911 Turbo for less than six figures.

Those hard launches might explain why our WRX's clutch began slipping at 24,660 miles. Or maybe the clutch's early exit was

## ▼ C/D TEST RESULTS

PERFORMANCE	NEW	40,000
ZERO TO 60 MPH	5.0 sec	5.0 sec
ZERO TO 100 MPH	13.4 sec	14.1 sec
ZERO TO 130 MPH	26.5 sec	29.7 sec
ROLLING START, 5-60 MPH	6.4 sec	6.5 sec
1/4-MILE	13.7 sec @ 101 mph	13.8 sec @ 99 mph
BRAKING, 70-0 MPH	157 ft	161 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	0.91 g	0.90 g
TOP SPEED (GOVERNOR LIMITED)	144 mph	
EPA FUEL ECONOMY, CITY/HWY	21/28 mpg	
C/D-OBSERVED FUEL ECONOMY	25 mpg	
UNSCHEDULED OIL ADDITIONS	0 qt	

### OPERATING COSTS (FOR 40,000 MILES)

SERVICE (6 SCHEDULED, 2 UNSCHEDULED)	\$697
NORMAL WEAR	\$0
REPAIR	\$0
GASOLINE (@ \$2.97 PER GALLON)	\$4749

### NONWARRANTY REPAIRS

REPLACE CLUTCH	\$300
----------------	-------

### DAMAGE AND DESTRUCTION

REPLACE LEFT-REAR TIRE	\$175
REPLACE WHEEL STUDS AND LUG NUTS	\$18
REPLACE TPMS SENSOR	\$125

### LIFE EXPECTANCIES (ESTIMATED FROM 40,000-MILE TEST)

TIRES	60,000 miles
FRONT BRAKE PADS	90,000 miles
REAR BRAKE PADS	50,000 miles

### WHAT BITS AND PIECES COST

HEADLAMP	\$360
ENGINE AIR FILTER	\$26
OIL FILTER	\$9
WHEEL	\$360
TIRE	\$159
WIPER BLADES (LEFT/RIGHT)	\$30/\$20
FRONT BRAKE PADS	\$85



## RANTS AND RAVES

### STEVE SILER

High-speed California two-lanes such as State Route 198 bring out this car's rallying spirit like no other venue.

### TONY QUIROGA

I hate this heavy clutch and the limited engagement travel. It's not at all L.A.-friendly.

### ERIK JOHNSON

I love where this sits in terms of refinement. It has just enough rough edges left to give the impression of a barely tamed animal.

### JEFF SABATINI

The WRX is a four-wheel-drive beer bong. I'm happy to have outgrown its appeal, but I still have a fondness for what it represents—eating ramen noodles all week to be able to afford going out on the weekend.

### AARON ROBINSON

The ratios are widely spaced in the lower gears, so it's hard to shift fast and be smooth.

### DON SHERMAN

What this ride lacks in radiated prestige it more than makes up in fun to drive.

### TONY QUIROGA

Just picked up the WRX after its new clutch. The pedal effort is reduced by more than 50 percent. What a relief.

### RUSTY BLACKWELL

You can feel every single millimeter of height variance in the road.

### MIKE SUTTON

The stereo system's head unit is a slow, confounding, and frustrating piece of crap.

### JENNIFER HARRINGTON

Maybe I'm just too used to driving stuff like the Corvette and the Cayman, but I find the ride to be quite tolerable, actually.

# BURN RUBBER. DON'T BREATHE IT.



## YOUR CAR'S INTERIOR IS NO PLACE FOR DIRTY AIR.

A K&N® Cabin Air Filter can make sure of it, helping trap the pollutants and allergens you don't want to breathe. And it's washable and reusable, so your wallet breathes a lot easier, too. Order yours online or stop by AutoZone today.

[KNFILTERS.COM](http://KNFILTERS.COM) | 800-858-3333



**SUPERIOR AIRFLOW.  
SUPERIOR PERFORMANCE.™**

AVAILABLE AT

078  
04.2016

long-term test

the result of a manufacturing defect. Either way, the friction disc was replaced under partial warranty, leaving us to kick in \$300 of the \$1200 total bill. It would be the single significant service incident in our WRX's 17-month stay.

Smaller snafus included a burned-out headlight bulb, replaced under warranty at 38,000 miles, and a nail that forced us to prematurely replace a tire. Features editor Jeff Sabatini locked himself out of the car twice, while it was running, possibly saying more about Sabatini than the Subaru.

We also snapped three wheel studs, cracked two lug nuts, and broke a wheel's pressure-monitoring sensor in the course of swapping between winter and summer rubber in our fledgling in-house tire shop, Deep Discount Tire. While we own full responsibility for the busted tire-pressure sensor, we always thread lug nuts by hand and tighten them with a torque wrench. The three studs were damaged at various times as we dismounted wheels, revealing mangled threads that indicated the nuts

↓ The turbocharged 2.0-liter provides an impressive surge of power once on boost, and it returns unexpectedly good economy.



weren't seating properly. Comforting our conscience further, the man behind our local Subaru parts counter acknowledged that broken studs weren't uncommon.

Both before and after the clutch replacement, drivers logged concerns that our WRX was difficult to drive smoothly. Editors called attention to the abrupt clutch take-up, a touchy throttle, a small dose of turbo lag, and excessive driveline lash. Those traits are most apparent in city driving, where modest throttle application is met with a whiff of lag followed by a dramatic surge of thrust. It's as if, confined by traffic and low speed limits, the WRX bristles with pent-up energy and teenage angst. We'd prescribe a more linear throttle mapping as the initial therapy.

We wouldn't, however, recommend fixing every one of the WRX's quirks. A nicer interior would be a luxury; a quieter cabin would make the car more livable; and, fortunately, Subaru has already addressed the biggest flaw of the 2015 model with the new infotainment unit. But we don't want to imagine a WRX so civilized that it balks at gravel roads.

The WRX's more charming imperfections—such as the notchy shifter, the bawdy engine, and the flinty suspension—are exactly why it stands out in the sport-compact segment. The greatest crime against the WRX would be to refine it into a buttoned-up commuter, severing the connection to its rally roots and turning it into just another small car. ■

## ★ FLEET FILES



## ▲ 2015 MAZDA 3 S

29,163 MILES

31 OBSERVED MPG

Last July, we sent the 3 out to visit Uncle John Phillips in Montana. Every fall, when he migrates back to Ann Arbor for a week, Phillips takes a fresh long-termer home with him. This time, smitten with the luxurious microhatch, he sneaked it away for a second fling. He loved it so much that we only finally recovered the 3 in November. Those two round trips from Michigan to Montana helped the car pile on some 11,000 miles in just four months. A pole in an Ann Arbor coffee-shop parking lot helped it accumulate a \$1423 body-shop bill. Subtract that cost, though, and our service tab has yet to break \$300.



## ▲ 2014 MINI COOPER S

HARDTOP

38,332 MILES

30 OBSERVED MPG

When we last checked in, our Mini was coming off a three-month bender during which it spent more than half its time at the dealership for, among other things, repair of an oil leak and prematurely worn suspension bits. In the months since, it's been more reliable, though not without fault. The lumbar-adjustment knob fell off, and the upper-glovebox lid is stuck in limbo, refusing to open or fully close. It's hard to look past the quality woes, but if we squint, there's a hearty engine, deft handling, and a cabin that's easier to live with than those of previous Minis.

## EXOTICS RACING®

LAS VEGAS - LOS ANGELES

LAS VEGAS  
MOTOR SPEEDWAY

## DRIVE EXOTIC CARS ON A RACETRACK!

FERRARI 488 GTB  
\$449 / 5 LAPSFERRARI 458 ITALIA  
\$399 / 5 LAPSFERRARI F430 F1  
\$299 / 5 LAPSLAMBORGHINI AVENTADOR  
\$499 / 5 LAPSLAMBORGHINI HURACÁN  
\$399 / 5 LAPSLAMBORGHINI GALLARDO  
\$299 / 5 LAPSPORSCHE 991 GT3  
\$299 / 5 LAPSPORSCHE 991 TURBO  
\$299 / 5 LAPSPORSCHE CAYMAN GTS  
\$199 / 5 LAPSMcLAREN 570S  
\$399 / 5 LAPSAUDI R8 V10 PLUS  
\$249 / 5 LAPSNISSAN GT-R  
\$249 / 5 LAPSCORVETTE C7 Z06  
\$299 / 5 LAPSMERCEDES-AMG GT S  
\$249 / 5 LAPSASTON MARTIN VANTAGE GT  
\$249 / 5 LAPS

Exotics Racing brings you the original supercar driving experience with the world's largest fleet of exotic cars. Now with 2 racetracks to choose from: Las Vegas and Los Angeles. You'll get real time coaching from pro racing instructors as you push the limits lap after lap. Driving packages start from \$199 for 5 laps. High speed ride-along, gift certificates, group & corporate events also available. Open 7 days a week at the Las Vegas Motor Speedway. Ask about our complimentary round-trip transportation.



BOOK YOUR DRIVING EXPERIENCE TODAY!  
CALL 1 (702) 802-5672 OR VISIT [EXOTICSRACING.COM](http://EXOTICSRACING.COM)

LENGTH: 1.2 MILES  
TURNS: 7  
BANKING: 11%LAS VEGAS  
MOTOR SPEEDWAYLENGTH: 1.2 MILES  
TURNS: 8  
TOP SPEED: 180 MPH



Revolutionizing tire buying since 1979®



**FIND**



**DELIVER**



**INSTALL**

## ONLINE OR ON THE PHONE

Over a Million Tires in Stock!  
Plus Wheels, Suspension and More.

Shop by vehicle to quickly find the right products,  
or complete your order by talking to one of our  
classroom- and track-trained sales specialists.



## SHIP TO AN INSTALLER It Couldn't Be Easier.



If you'd like, we can ship your order to your choice of one of  
our 8,000+ Independent Recommended Installers.

Find one near you at [www.tirerack.com/installer](http://www.tirerack.com/installer)

# THE RIGHT TIRE AT THE RIGHT PRICE

OVER 500 MODELS FROM 17 MANUFACTURERS

**BFGoodrich** **BRIDGESTONE** **Continental** **Dick Cepek** **DUNLOP** **Firestone** **FUZION**  
**GENERAL TIRE** **GOODYEAR** **Hankook** **Hoosier** **KUMHO TIRE** **MICHELIN**  
**PIRELLI** **SUMITOMO** **TOYO TIRES** **YOKOHAMA**



## CONSUMER RATINGS & REVIEWS

Nearly 2.5 Billion Miles of Real-World Tire Data!

Our ratings and reviews, submitted by consumers just like you, uncover trends in performance satisfaction (or dissatisfaction) and will help you pinpoint what's right for you.

Submit a survey and tell everyone how your tires perform.

		Consumer Satisfaction Survey											
		Performance		Safety		Tread Life		Fuel Economy		Comfort			
1	100%	7.7	8.8	8.3	8.9	9.1	9.3	7.3	8.8	8.7	8.0	8.3	295,306
2	99%	7.8	8.8	8.3	8.8	9.2	9.2	7.4	8.7	8.6	8.3	8.7	461,725
3	97%	8.4	8.7	8.8	8.8	9.1	8.8	7.5	8.8	8.3	8.4	8.2	387,795
4	96%	8.8	8.8	8.7	8.3	8.5	7.7	8.8	8.7	8.1	8.2	8.6	258,856
5	85%	7.4	8.8	8.8	8.8	9.1	8.8	7.5	8.8	8.8	8.8	8.7	1,641,945
6	54%	7.2	8.8	8.7	8.4	8.8	8.4	7.6	8.8	8.2	8.0	7.1	5,578,503
7	34%	8.1	8.0	8.1	8.2	8.7	8.4	8.3	7.7	7.0	7.0	7.4	246,500
8	94%	7.8	8.2	8.6	8.8	9.2	9.7	8.8	8.3	8.8	8.3	8.2	4,067,895
9	80%	7.7	8.2	8.3	8.8	8.9	8.8	8.7	8.3	8.7	8.4	8.2	23,108,180
10	82%	8.7	8.2	8.1	8.8	8.8	8.4	7.1	8.2	8.1	8.0	7.4	9,581,424
11	92%	7.2	8.2	8.8	8.8	9.2	9.3	8.1	8.7	8.5	8.2	7.8	1,806,329
12	81%	8.8	8.8	8.8	8.8	9.2	9.3	8.5	8.8	8.7	8.0	7.8	3,861,040
13	89%	7.4	7.7	7.8	8.7	8.5	8.1	6.4	5.3	3.4	8.7	7.8	40,058,066

[www.tirerack.com/reviews](http://www.tirerack.com/reviews)



## BOLT-ON CONVENIENCE

Packages arrive ready to bolt on, mounted and balanced, with all necessary hardware.



[www.tirerack.com/packages](http://www.tirerack.com/packages)



**800-981-3782**

## SPECIAL OFFER

Take advantage of a current promotional offer, or sign up to receive special offer emails.



[www.tirerack.com/specials](http://www.tirerack.com/specials)



## See Them on Your Vehicle!



Enter your vehicle at [tirerack.com](http://tirerack.com) to experience one-click access to everything that fits it.

### What About TPMS?

 We can assist you in selecting wheels that are compatible with your vehicle's sensors. We also offer an extra set of sensors for all TPMS systems, so your tire and wheel package can arrive with sensors already installed.





**A HUGE SELECTION OF OVER 1,100 DIFFERENT WHEELS**



**SUSPENSION**



# Iconic Cars



The experts at **Car and Driver**, who have tested every version of the **Corvette** and every model of **Porsche**, have created two stunning retrospectives celebrating the **past and present** of these incredible cars. Featuring sensational photography throughout.

**AVAILABLE AS E-BOOKS**

To download, visit [www.rosettabooks.com/iconic-cars-ebooks](http://www.rosettabooks.com/iconic-cars-ebooks)

▼ THIS MONTH

MERCEDES-AMG G65 / VOLKSWAGEN BEETLE DUNE / 2015 MITSUBISHI LANCER EVOLUTION FINAL EDITION



. CONVERTIBLE

## BUICK CASCADA

Buick's new marketing campaign is a decent car, too.  
*by Jared Gall*

The stretch of Florida State Road A1A that island-hops from Miami to Key West is flat and straight, the speed limit almost never exceeding 45 mph. Passing zones are rare; A1A is a lousy place to evaluate a car. But if you're Buick and you want to conscript a bunch of unwitting writers into a guerilla marketing campaign for your new convertible, the A1A is a savvy place to stage a group drive.

Florida is, not surprisingly, one of the biggest convertible markets in the U.S.

↑ The Cascada might be heavy and slow, but its structure is stout and it's well suited to trundling down by the seaside.

(the others being California, New Jersey, New York, and Texas). Buick is big in the Midwest and China and that's about it. Company executives readily admit that the Cascada is as much about garnering attention and getting people into showrooms as it is about sales. Which is good, because the sales potential is seriously limited. Even if Buick could match every last sale of the old Chrysler 200 convert-

ible, Volkswagen Eos, and Volvo C70 combined, it'd be looking at just 15,000 or so units per year. For perspective, Buick's slowest-selling model last year was the Regal, of which it sold 19,504. So the Cascada is not a volume play.

The sales potential may be limited, but so is the investment; the Cascada is really an Opel with a different logo. Don't feel cheated, though. Regal and Verano buyers apparently don't, and they're more or less cruising around in Opel Insignias and Astras, respectively. The Cascada shares much of its structure with the Verano but has a longer wheelbase, reinforced A-pillars, stiffer rockers, substantial underbody bracing, and a fortified rear bulkhead. All that additional steel yields a convertible that doesn't so much tip the scales as it clanks down,

bending the beam and flinging some two tons of counterweights across the garage. Four thousand pounds is some serious mass for a car this size. The Verano, at just an inch shorter and an inch narrower, is roughly 450 pounds lighter. The Cascada is nearly as heavy as the BMW M4 convertible, which has a bulky folding hardtop and a turbocharged six-cylinder.

But here's a sentence we've never written before: The Buick is notably stiffer than the BMW. All that bracing pays off with limited flexing and zero cowl shake. The Cascada uses GM's HiPer Strut suspension up front and a torsion beam with

Watt's linkage locating the rear. Torsion beams aren't noted for enabling exceptional handling, but they are compact, which matters in a convertible, where trunk space is already crowded from above by top stowage.

And Buick's engineers did a commendable job of tuning the Cascada's ride. In the 160 or so miles from Key West to Miami, A1A has maybe eight turns, making its selection as a drive route seem like an obvious defensive move on Buick's part. But through dogged (and obnoxious) lane changing and aggressive departures from the main highway, we deduced that the

## ▼ SPECIFICATIONS

<b>VEHICLE TYPE:</b>	front-engine, front-wheel-drive, 4-passenger, 2-door convertible
<b>BASE PRICE</b>	\$33,990
<b>ENGINE TYPE:</b>	turbocharged and intercooled DOHC 16-valve inline-4, iron block and aluminum head, direct fuel injection
<b>DISPLACEMENT</b>	98 cu in, 1598 cc
<b>POWER</b>	200 hp @ 5500 rpm
<b>TORQUE</b>	221 lb-ft @ 2200 rpm
<b>TRANSMISSION:</b>	6-speed automatic with manual shifting mode
<b>DIMENSIONS</b>	
<b>WHEELBASE</b>	106.1 in
<b>LENGTH</b>	184.9 in
<b>WIDTH</b>	72.4 in
<b>HEIGHT</b>	56.8 in
<b>PASSENGER VOLUME</b>	82 cu ft
<b>TRUNK VOLUME</b>	10-13 cu ft
<b>CURB WEIGHT</b>	4000 lb
<b>PERFORMANCE (C/D EST)</b>	
<b>ZERO TO 60 MPH</b>	8.4 sec
<b>ZERO TO 100 MPH</b>	24.2 sec
<b>1/4-MILE</b>	16.3 sec
<b>TOP SPEED</b>	125 mph
<b>FUEL ECONOMY</b>	
<b>EPA CITY/HWY</b>	20/27 mpg

suspension is gratifyingly firm to a degree that is slightly risky given Buick customers' traditional preferences. The Cascada rolls little, and its rack-mounted electric power steering is pleasantly heavy and quick. While the brake pedal is mushier than we'd prefer, it's progressive and easy to modulate.

If the intensely horizontal drive location was in fact a defensive play, it was more likely chosen to conceal the engine's deficiencies, not those of the chassis. As with most models on the Continent, Opel's Cascada offers a panoply of powertrains. Buick took only the biggest gasoline one, a 1.6-liter turbocharged four with an iron block and aluminum head. Then GM juiced it further so that it makes 200 horsepower and 221 pound-feet of torque in the 15-second overboost mode (or 207 pound-feet otherwise).





↑ In blue, the Cascada looks like a broken robin's egg. Still, it's far more attractive than the old Chrysler 200 convertible.

Twenty pounds per horsepower is a ratio you won't find anywhere outside of the heavy-duty-pickup realm, and the Cascada accelerates like a diesel dualie. With this car's estimated 8.4-second plod to 60 mph and the little Encore SUV's 9.3 seconds, Buick might have the slowest lineup of any brand in the U.S. If slow, though, the 1.6 is perfectly smooth, and the soundtrack is never strained. A six-speed automatic is the only transmission choice, and it is likewise relaxed as it goes about its shifting.

Maybe the Keys weren't misdirection so much as an affirmation. Thrills may be a pipe dream in the Cascada, even if buyers are unlikely to care. This convertible excels on island time. Load up, drop the top, hang an arm over the door, and relax. The cloth top lowers in 17 seconds and rises in 19, with no latches or releases to pull. And it'll do so up to 31 mph, your approximate cruising speed on significant portions of A1A and fast enough for a speeding ticket in a school zone.

The interior is decently roomy for four adults. A smart system aids rear-seat comfort: Pull the release on the seatback, and the front seats motor forward. Return

the seatback to its locked position, and it motors back. But when it touches the occupant's knees, it stops and scoots forward an inch or so to leave a little wiggle room. In front, the contrast-stitched leather dashtop and door panels impart a rich ambience. And, as in pricey German two-doors, robo-arms power forward to hand front-seat occupants their shoulder belts when they close the doors, while pyrotechnic roll bars deploy from behind the rear seats if the Cascada detects imminent inversion.

The Cascada will come in two trim choices: all or nothing. There's a Premium and a base and no extra-cost options other than paint colors. But even nothing includes a lot of stuff. For \$33,990, the base model comes with heated power driver's and front-passenger's seats, a heated steering wheel, navigation, dual-zone climate control, and HID headlights and LED taillights. At \$36,990, the Premium adds forward-collision alert, lane-departure warning, automatic wipers, and wheel choices.

Driving along the tourist-infested A1A, we couldn't help but think how well suited the

Cascada would be to the auto industry's deepest shame: rental duty. But Buick is refreshingly candid about that possibility. The point of the Cascada is to get new potential customers interested in Buick. The brand is not too uptight about how that encounter happens. Getting people to notice your product, that's marketing. And so is the Cascada. But with more power and in a place with some curves, it could be a rather good car, too.



# MERCEDES-AMG G65

**TESTED** Watching G63 owners deflate after they notice the “V12 Biturbo” badge on the flank of your ute. A \$3000 pair of blue jeans. *by Daniel Pund*

Even in a world with no shortage of ridiculousness, the Mercedes-AMG G65, a three-ton military vehicle crammed to overflowing with a 621-hp V-12 and quilted leather, stands tall as an exemplar of absurdity.

Give Mercedes its due for this accomplishment. What other entity could muster the resolve to produce a consumer product quite so insane? If Chrysler decided to cram a Hellcat V-8 into the nose of a Wrangler, well, that might come close. But even Chrysler, which once produced the Plymouth Prowler, isn't quite that nuts. The other car companies aren't even in the game.

In fact, the G65's only real competition for the title of “Most Absurd of All the Vehicles” are other versions of the G-class. G63 AMG 6x6, anyone?

Bizarre as this stick-axle, flat-windshield nuclear brick may be, it is a vehicle

that does actually exist, one that has been for sale in other markets (notably China, the Middle East, and Russia) for a few years already. There are hundreds of these things elephant-dancing around the world right now. It has proven relatively popular where sold, even if sometimes it appeals to those for whom traffic is an inconvenience as well as an occupation. Somehow, it's only now that America's Centurion Card superusers are getting the chance to plop down a probably depressingly small amount of their wealth on this, the most exclusive Mercedes troop carrier.

So, we've now driven it and tested it and stared at it blankly for quite some time and can report that it is indeed a V-12-powered G-class.

The V-12 in question is the twin-turbocharged, three-valve-per-cylinder unit that's been available in S-class coupes and sedans and the SL convertible for years. It

makes 738 pound-feet of torque. As with the other Mercedes V-12 models, the G65's engine is mated to a seven-speed automatic. And, also like the other V-12 models, it costs more than \$200,000. Unlike the S-classes and the SL powered by this engine, the G65 is available with a chrome brush guard and glowing Alien Green paint.

Our vehicle showed up in a decidedly more tasteful Mystic Brown Metallic color. We'll leave it to your aesthetic leanings to decide whether the “highly polished” 21-inch wheels are tasteful. They are wrapped with 295/40 Continental Cross-Contact ultra-high-performance all-season tires. These might be simultaneously the most overstressed and understressed tires on any passenger vehicle in the world. The 6067-pound G65 can manage only 0.58 g on the skidpad. Your dad's Plymouth

We're not sure why Mercedes didn't just polish the whole vehicle. Take care to avoid scuffing the chrome brush guard with brush.



## ▼ SPECIFICATIONS

<b>VEHICLE TYPE:</b>	front-engine, 4-wheel-drive, 5-passenger, 4-door tycoon transport
<b>PRICE AS TESTED</b>	<b>\$221,925</b>
<b>BASE PRICE</b>	\$218,825
<b>ENGINE TYPE:</b>	twin-turbocharged and intercooled SOHC 36-valve V-12, aluminum block and heads, port fuel injection
<b>DISPLACEMENT</b>	365 cu in, 5980 cc
<b>POWER</b>	621 hp @ 5300 rpm
<b>TORQUE</b>	738 lb-ft @ 2300 rpm
<b>TRANSMISSION:</b>	7-speed automatic with manual shifting mode
<b>DIMENSIONS</b>	
<b>WHEELBASE</b>	112.2 in
<b>LENGTH</b>	187.5 in
<b>WIDTH</b>	73.0 in
<b>HEIGHT</b>	76.3 in
<b>PASSENGER VOLUME</b>	124 cu ft
<b>CARGO VOLUME</b>	40 cu ft
<b>CURB WEIGHT</b>	6067 lb
<b>CENTER-OF-GRAVITY HEIGHT</b>	29.0 in

## ▼ C/D TEST RESULTS

<b>ZERO TO 60 MPH</b>	<b>5.1 sec</b>
<b>ZERO TO 100 MPH</b>	12.2 sec
<b>ZERO TO 140 MPH</b>	28.1 sec
<b>ROLLING START, 5-60 MPH</b>	5.6 sec
<b>1/4-MILE</b>	<b>13.6 sec @ 105 mph</b>
<b>TOP SPEED (governor limited)</b>	140 mph
<b>BRAKING, 70-0 MPH</b>	165 ft
<b>ROADHOLDING,</b>	
<b>300-FT-DIA SKIDPAD*</b>	0.58 g
<b>FUEL ECONOMY</b>	
<b>EPA CITY/HWY</b>	11/13 mpg
<b>C/D OBSERVED</b>	<b>10 mpg</b>

\*Stability-control inhibited.

**TEST NOTES:** With the engine's size and location, the G65's near-50-50 distribution is remarkable. Stability control curtails cornering speed before it gets interesting.

**Shell V-Power Nitro+**  
The Official Fuel of CAR AND DRIVER

Volare could probably have done that. The problem is not the tires; the insanely low figure is the fault of the hyperactive stability-control system. Well, it's actually the fault of the ute itself. This is a 76.3-inch-tall vehicle riding on a 59.1-inch-wide track. Coke bottles corner with greater natural stability. Hence the G65's stability control has been given a level of authority that would make even Nurse Ratched envious. "We do not impose certain rules and restrictions on you without a great deal of thought about their therapeutic value," the system repeatedly says.

On the road, the thing feels better than the numbers suggest. Considering that this three-ton cube carries its weight higher than just about any other vehicle we've ever tested (including a 1915 Ford Model T), Mercedes has done a fine job limiting body roll. It should be terrifying to drive this with verve, but it's not. Just know that the heavy steering is comically slow and utterly without feel. The expansive dead zone at the center of the steering helps prevent kickback from hurting your thumbs during the off-roading excursions this vehicle is no longer equipped to take.



The three rocker switches on the center stack for the three locking differentials come with their own warning sticker that might as well say: "Look, you don't need to know what these are for. Just move along."

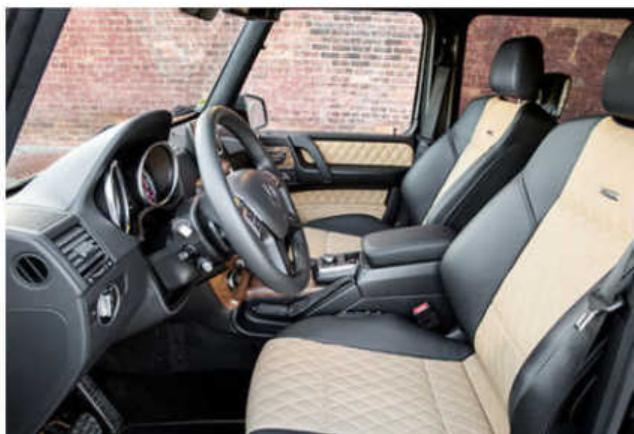
The downside of the actually sorta, kinda decent body control is that the G65 clumps and bounds along on choppy pavement as if it had two solid axles and exceptionally large, heavy wheels.

But, if we haven't mentioned it earlier, the G65 has a V-12 engine. It doesn't have as thrilling an exhaust note as the G63's twin-turbocharged 5.5-liter V-8, which, by the sound of it, came from God's personal Cigarette boat. It emits, rather, a low-pitched hum. Neither is the G65 as quick as the \$78,000-less-expensive G63. The V-12-powered G trails the V-8-motivated one by a few tenths of a second to 60 mph (5.1 to 4.8) and a few tenths in the quarter-mile (13.6 seconds to 13.3). But that's still pretty darn quick for a vehicle the shape of an outbuilding. And it will power on to a governed 140 mph, if common sense doesn't convince you to back off at anything above 100.

So what's the point? Beats us. But we will say that we understand that the appeal of the G65, or any G-class model, has nothing whatsoever to do with reason or ease of use or comfort or ability or even performance. It comes from owning a sport ute that

↑ The side-exit exhaust will limit off-road adventures—or at least make them more expensive. The engine bay won't hold a V-16.

was never designed for the mass market. Space efficiency and fuel efficiency and cost efficiency—those things that makers of mainstream vehicles obsess about and compromise for—are antithetical to a vehicle designed at the behest of the Shah of Iran. And, indeed, the G65 is abysmal by all three of those measures. Locking the doors sounds like four machine guns cocking simultaneously. Closing any of the doors sounds like slamming shut the entrance to a walk-in freezer. People will shake their heads in quiet disgust when you tell them the G65's price. But later they'll thank you profusely for letting them sit in such a special thing. It's so not like a Honda Pilot. That's its appeal. The G65 is, in fact, a huge, rolling, and figuratively highly polished middle finger to the uptight and the reasonable. For that we like it. But that does not make it a good thing.



# VOLKSWAGEN BEETLE DUNE

Mad Max: Sesame Street. by Eric Tingwall

Volkswagen wants all of us to remember the good ol' days. You know, anytime prior to September 2015, when the EPA dropped its NO<sub>x</sub> hammer on the company's heavy-breathing diesels. In fact, VW would like nothing more than to guide you all the way back to the 1960s, when the pollution was hazier and the love flowed freely. Between its latest Microbus-inspired concept—an all-electric *mea culpa* called the BUDD-e—and this new Beetle Dune, VW appears eager to tap the nostalgia ATM again.

The Beetle Dune, a mid-level trim in special-edition guise, is meant to evoke Baja Bugs, those modified Type 1 Beetles that began roaming the desert in the late 1960s. They could be anything from a recreational dune buggy to a bona fide, class-11 desert racer, and while there wasn't a single blueprint, a Baja Bug was instantly recognizable by its trimmed-back bodywork and swollen tires.

But there's a reason this throwback is called Beetle Dune and not Beetle Baja. Two reasons, actually: Compared with standard Beetles, the front-drive Dune's rear track grows just 0.2 inch wider, and its suspension lifts the floor just 0.4 inch

↓ Note that Volkswagen left off the word "buggy" after "Dune." Mechanical changes from your basic Beetle 1.8T are slight indeed.

higher. That's the extent of the Dune's mechanical changes. Beaches will not be invaded, sand dunes will not be jumped, and deserts will not be skimmed.

We deviated from VW's prescribed pavement-only route down a gravelly access road and made it 50 yards before a drainage gully threatened to tear off the car's front fascia. While the Dune's front and rear clips give the false impression that the car is equipped with skid plates, we resisted the temptation to call Volkswagen's bluff.

The Dune is a car playing dress-up and



## ▼ SPECIFICATIONS

<b>VEHICLE TYPE:</b>	front-engine, front-wheel-drive, 4-passenger, 2-door coupe or convertible
<b>BASE PRICE (est)</b>	\$24,815-\$30,000
<b>ENGINE TYPE:</b>	turbocharged and intercooled DOHC 16-valve inline-4, iron block and aluminum head, direct fuel injection
<b>DISPLACEMENT</b>	110 cu in, 1798 cc
<b>POWER</b>	170 hp @ 4800 rpm
<b>TORQUE</b>	184 lb-ft @ 1500 rpm
<b>TRANSMISSION:</b>	6-speed automatic with manual shifting mode
<b>DIMENSIONS</b>	
<b>WHEELBASE</b>	100.0 in
<b>LENGTH</b>	168.7 in
<b>WIDTH</b>	71.7 in
<b>HEIGHT</b>	58.6-59.1 in
<b>PASSENGER VOLUME</b>	81-85 cu ft
<b>TRUNK VOLUME</b>	7-15 cu ft
<b>CURB WEIGHT</b>	3050-3250 lb
<b>PERFORMANCE (C/D EST)</b>	
<b>ZERO TO 60 MPH</b>	7.4-7.6 sec
<b>ZERO TO 100 MPH</b>	21.0-21.2 sec
<b>1/4-MILE</b>	15.7-15.9 sec
<b>TOP SPEED</b>	125 mph
<b>FUEL ECONOMY</b>	
<b>EPA CITY/HWY</b>	25/34 mpg

angling for a starring role in *Mad Max: Sesame Street*. It will sell on its black wheel-arch extensions and the long, flat spoiler that appears to be inspired by that other German icon, the one that still has a rear engine. The Dune follows the same formula that turns an Audi wagon into an Allroad, or a Volvo wagon into a Cross Country. But at least those vehicles have four-wheel drive. The Dune exists because we live in a time when automakers believe everything can and should be a crossover.

It may be disingenuous, but the Dune is not a bad car. Its virtues are the same as those of any other Beetle. Massive slabs of glass make for an airy cabin and excellent outward visibility. It steers with precision and rides firmly but with control—typical VW traits. You can choose between coupe or convertible and black, white, or Sandstorm Yellow paint, but you always get a turbocharged 1.8-liter four-cylinder and a six-speed automatic. Our only serious beef:

The brake pedal requires an unusually firm and long press before the binders bite hard.

Rather than a Baja Bug, the Dune follows in the recent footsteps of VW special editions, such as the Beetle Denim, the Fender Edition, and the Classic. That gives us an idea for the next model. If Volkswagen can't figure out how to sell turbo-diesel cars in the U.S. again, maybe it can pay tribute to those torque-rich, high-mpg glory days with the Beetle Diesel Edition, powered by a zero-emission battery-electric powertrain, of course.



# Proven Leaders.

## Team Players.

## Future Colleagues.

# RESUME ENGINE



**The right team can take a business to the next level.**

The experience veterans gain in the military makes them ideal employees in the civilian workforce. Resume Engine translates military experience, training, and honors into relatable job qualifications and allows recruiters to search for veteran candidates at no cost. Veterans can use this free tool to create and share a strong resume with employers nationwide.

Start searching for your next team member today.

**[ResumeEngine.org](http://ResumeEngine.org)**

**HIRING OUR HEROES**  
U.S. CHAMBER OF COMMERCE FOUNDATION

 **TOYOTA**  
Let's Go Places



## 2015 MITSUBISHI LANCER EVOLUTION FINAL EDITION

**TESTED**  Quick reflexes, slamming power, glorious heritage.  Slop-bucket build quality, punitive ride, throwback technology. *by John Pearley Huffman*

The Lancer Evolution Final Edition is a compact sedan that costs nearly \$40,000 and has no navigation system or backup camera. The sole USB port is hidden in the glove compartment as an afterthought. Most of the plastic panels look as if they were blow-molded by an asthmatic, the switchgear actively discourages switching, and leaving a bowling ball loose in the trunk will complete the structure's imitation of a spray-paint rattle can. There's a lot to loathe about this, the last Evo that's ever likely to be. And then there's so much to love.

The turbocharged 2.0-liter four is rated at 303 horsepower, delivers colossal mid-range torque, and sounds as if it's consuming a raccoon. Each of the five forward gears engages with the certainty of a guillotine, and the overdrive fifth gear doesn't slow the engine down much for freeway driving thanks to the supershort 4.69:1 final-drive ratio. The only way the hydrau-

lically assisted power steering could be more engaging is if the driver held the tie-rod ends in his bare hands. This is a full-immersion automobile; the driver can practically drown in its mechanical frenzy.

Like so many great cars before it, the Evo is awesome because it's a race car. Mitsubishi, consistently confused about what it wants to be, at one time decided to embrace rallying as a path to corporate clarity. And in 1987 it built the four-wheel-drive, turbocharged Galant VR-4 sedan to go hunting. The iron-block 4G63 2.0-liter engine and its accompanying four-wheel-drive system were freakishly brilliant, but the Galant was too large to dominate World Rally Championship. So, in 1992, Mitsubishi stuffed the Galant VR-4's driveline into the smaller, agonizingly ordinary Lancer sedan to create the first Evo—the Evolution I.

Though it was sold only in Japan, the first Evo was too good for its legend to stay



↑ The Evo leaves this world the same way it came in: with a chintzy interior and enough performance to forgive all that's missing.

on the archipelago. With 247 horsepower and a massive intercooler crammed into its nose, it went on sale shortly after magazines like *Sport Compact Car* were hitting newsstands in America. It was the scalded-cat, twerp-monster answer to the aging, muscle-car orthodoxy of the early 1990s. It was an anti-style four-door box to crave—from afar, unattainable—and people born after Woodward's heyday could claim it as the center of their performance universe. It was a profane digit aimed at Camaros, Mustangs, Chevelles, and Chargers.



For more than 100 years, Shell has been harnessing science, engineering, and technology to pioneer the world's most innovative gasoline. For nearly half a century, BMW M has been building world class automobiles by merging engineering with cutting edge technologies. Today, this shared passion has brought these two great brands together in a unique relationship – one that is constantly striving to bring you the best automotive and fuel technologies. Get the full story at [www.shell.us/vpower](http://www.shell.us/vpower)

The official fuel of *Car and Driver*.

# A Shared Passion for Performance

 **BMW M recommends**  
**Shell V-Power® NiTRO+ Premium Gasoline**





As American car freaks made do with the mechanically similar Diamond-Star (Chrysler, Dodge, Eagle, Mitsubishi, and Plymouth) coupes and turning the Honda Civic quick, the Evo legend grew. By the time the Evo II appeared in 1993, the 4G63T was snorting out 256 horsepower, climbing to 266 in 1995 with the Evo III. Then there was this Finnish guy named Tommi.

Mitsubishi's factory Ralliart team had developed the Evo into a near-perfect rally weapon, with Tommi Mäkinen as the trigger. With an insane instinct for car control, Mäkinen used a series of Evo IIIs, IVs, Vs, and VIs to win the WRC drivers' championship for four straight years, 1996 through 1999. Mäkinen could turn an Evo in mid-flight, carom off berms like pool-table balls, and gain speed as his cars disintegrated around him. Now the Evo legend was fortified with achievement. Mitsubishi only won the manufacturers' championship in 1998, but the Evo seemed to be charting an exciting course for the company's future.

As the 21st century arrived, the Evo legend was massive, and dozens were sneaking into America through importers. Even Mitsubishi finally got it through its thick commercial skull that Americans had an Evo appetite. So in 2003, Mitsu donated several Evo VIIIs for Paul Walker to drive in *2 Fast 2 Furious* and finally certified the Evo VIII for sale in America.

With its 271-hp 4G63T, the Evo VIII was raw, brutal, and punishing in the best possible way. "The Evo is not without its shortcomings—it's just that none of them



diminishes the ability to have fun in the car," wrote junior writing drone Daniel Pund in C/D's first comparo between the Evo and its perennial archenemy, the Subaru Impreza WRX STi [June 2003].

Through all the microsliced variations of Evo that Mitsu has served since then—RS, MR, GSR, SE, and various FQs—the character of the car has remained intact. It's still a car built with more snot than a diphtheria epidemic, that generates analog sensations rather than digital simulations, that is stinky-rotten fast.

The Final Edition plays like a best-of compilation. Based on the current Evolution X GSR, the hood, front fenders, and roof are aluminum, and the 2.0-liter 4B11 turbocharged four has been pumped up 12 horsepower to 303. The only transmission is that quaint five-speed. The front seats aren't Recaros, which says it all. The suspension features Eibach springs and Bilstein shocks, and those are big Brembo brakes behind each 18-inch Enkei wheel.

In compensation for the mechanical mayhem and coccyx-slapping ride, the Final Edition is the quickest Evo we've ever tested, running to 60 mph in 4.4 seconds. Launching takes a commitment to clutch abuse and faith that 245/40R-18

## ▼ SPECIFICATIONS

<b>VEHICLE TYPE:</b>	front-engine, 4-wheel-drive, 5-passenger, 4-door sedan
<b>PRICE AS TESTED</b>	<b>\$38,805</b>
<b>BASE PRICE</b>	\$38,805
<b>ENGINE TYPE:</b>	turbocharged and intercooled DOHC 16-valve inline-4, aluminum block and head, port fuel injection
<b>DISPLACEMENT</b>	122 cu in, 1998 cc
<b>POWER</b>	303 hp @ 6500 rpm
<b>TORQUE</b>	305 lb-ft @ 4000 rpm
<b>TRANSMISSION:</b>	5-speed manual
<b>DIMENSIONS</b>	
<b>WHEELBASE</b>	104.3 in
<b>LENGTH</b>	177.0 in
<b>WIDTH</b>	71.3 in
<b>HEIGHT</b>	58.3 in
<b>PASSENGER VOLUME</b>	95 cu ft
<b>TRUNK VOLUME</b>	7 cu ft
<b>CURB WEIGHT</b>	3517 lb

## ▼ C/D TEST RESULTS

<b>ZERO TO 60 MPH</b>	<b>4.4 sec</b>
ZERO TO 100 MPH	11.9 sec
ZERO TO 130 MPH	24.4 sec
ROLLING START, 5-60 MPH	6.0 sec
<b>1/4-MILE</b>	<b>13.3 sec @ 104 mph</b>
TOP SPEED (redline limited)	146 mph
BRAKING, 70-0 MPH	163 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	0.93 g
<b>FUEL ECONOMY</b>	
EPA CITY/HWY	17/23 mpg
<b>C/D OBSERVED</b>	<b>17 mpg</b>

**TEST NOTES:** Best acceleration achieved with lots of rpm and clutch slip. Reaching the cornering limit is easy because the front tires run out of grip well in advance of the rears.



Yokohama Advan tires stick as tenaciously in a straight line as they do in corners.

This is an exceptionally easy and satisfying car to go ridiculously fast in. There's always power available, the steering is instinctive and quick, and the brakes keep working no matter how much abuse is thrown their way. But it's utterly anti-social. It's a great car that's easy to hate.

The Evo X has been around since 2007, but it's this final one that brings back the charisma of its 4G63T-powered ancestors. Mitsubishi has imported 1600 of these final Evos, and though they're 2015 models, plenty linger on dealer lots.

Ultimately, the Evo FE is a throwback to 2003, back to when I was writing for *Sport Compact Car* and Wi-Fi networks weren't how we communicated with cars. But *Sport Compact Car* died in 2009, the generation that grew up worshipping the Evo is buying kid haulers now, and Mitsubishi has followed the crossover herd with the Outlander and Outlander Sport.

Some of the Evo's glamour wore off due to Mitsubishi's own inattention. But mostly it's the nature of life: The adolescent obsessions of a generation fade as it inevitably ages into adult responsibilities. And that sucks. ■



**low price**  
**YOUR JOURNEY STARTS HERE**

**FREE SAME-DAY SHIPPING!** Some restrictions apply.

Continental

HANKOOK

COOPER TIRES

GOODYEAR

MICHELIN

YOKOHAMA

BRIDGESTONE

NITTO



Control Contact Tour A/S

Ventus V12 EVO2

RS3-A

Eagle Sport AS

Defender AS

YK-580

Driveguard

Motivo

STARTS AT \$81

STARTS AT \$90

STARTS AT \$91

STARTS AT \$91

STARTS AT \$92

STARTS AT \$99

STARTS AT \$107

STARTS AT \$109

HANKOOK

GENERAL TIRES

YOKOHAMA

COOPER TIRES

MICHELIN

BF Goodrich

NITTO

GOODYEAR



Dynapro ATM

Grabber AT2

YK-HTX

Discoverer ATP

Defender LTX

T/A-A/T KO

Terra Grappler G2

Wrangler Duratrac

STARTS AT \$104

STARTS AT \$105

STARTS AT \$110

STARTS AT \$111

STARTS AT \$135

STARTS AT \$151

STARTS AT \$160

STARTS AT \$173

We have tires and wheels for your ATV/UTV and Trailer!

CARLISLE

Trail Wolf

CARLISLE

Radial

Trail RH



STARTS AT  
\$46



STARTS AT  
\$66

MB WHEELS

14" STARTS AT \$90

FALKEN TIRE

Pro G4 A/S

STARTS AT \$69



RAGE

RAGE

DR-39

MB WHEELS

MB WHEELS

Vöxx

KÖNIG

TSW



R5

R10

DR-33

Lovan

Icon

MGA

Solution

Mallory

14" \$84

15" \$83

14" \$84

15" \$95

15" \$96

15" \$105

15" \$115

15" \$144

VISION

MB WHEELS

MB WHEELS

LEVEL B

RACELINE

THE ROLLER

METHOD RACE WHEELS

BLADE RIMZ ALUMINUM



Warrior

TKO

Chaos

Punch

Raptor

Bandit

The Standard

Sierra

15" \$85

15" \$99

15" \$100

15" \$105

16" \$129

17" \$129

15" \$139

17" \$176

discounttiredirect.com

800.739.8999

M-F 8 a.m. - 9 p.m. EST SAT 9 a.m. - 6 p.m. EST

**DISCOUNT**  
**TIRE DIRECT**

# road-test digest

## HIGHLIGHTS

### MOST EXPENSIVE

Porsche 918 Spyder **\$875,175**

### LEAST EXPENSIVE

Chevrolet Spark **\$15,895**

### HIGHEST TOP SPEED

Porsche 918 Spyder **214 mph\***

### LOWEST TOP SPEED

Smart Fortwo ED Cabriolet **78 mph**

### QUICKEST 0-60 MPH

Porsche 918 Spyder **2.2 sec**

### SLOWEST 0-60 MPH

Ram ProMaster 1500 **13.4 sec**

### QUICKEST 1/4-MILE

Porsche 918 Spyder **9.8 sec**

### SLOWEST 1/4-MILE

Ram ProMaster 1500 **19.7 sec**

### SHORTEST STOPPING DISTANCE

Chevrolet Corvette Z06 **128 feet**

### LONGEST STOPPING DISTANCE

GMC Sierra 2500HD Denali 4x4 **217 feet**

### MOST GRIP

Chevrolet Corvette Z06 **1.19 g**

### LEAST GRIP

Mercedes-AMG G65 **0.58 g**

### BEST FUEL ECONOMY

BMW i3 **137/111 city/hwy MPGe**

### WORST FUEL ECONOMY

Mercedes-AMG G65 **11/13 city/hwy mpg**

**ACCELERATION:** Elapsed times from zero to 60 mph and through a quarter-mile distance. Tests are run in two directions and corrected to standard atmospheric conditions. The test vehicle is loaded with driver, full tank of fuel, and about 10 pounds of test equipment. To take full advantage of the power and traction available in manual-transmission cars, wheelspin and clutch slip are used. All upshifts are lift-throttle with the clutch disengaged, and the engine's redline is not exceeded. With automatic-transmission cars, brake torquing is used to produce the best results and alternative shift points are investigated. Performance is measured using Racelogic VBOX GPS-based equipment.

**TOP SPEED:** Maximum speed achieved without exceeding the engine's redline. The published figure is an average of two top-speed runs in opposite directions to cancel the effects of wind and grade.

**BRAKING, 70-0 MPH:** We report the second-shortest stopping distance from 70 mph from a total of six stops. Speed and distance are measured using the VBOX, triggered by a pressure switch on the brake pedal so that the vehicle's response characteristics are reflected in the results.

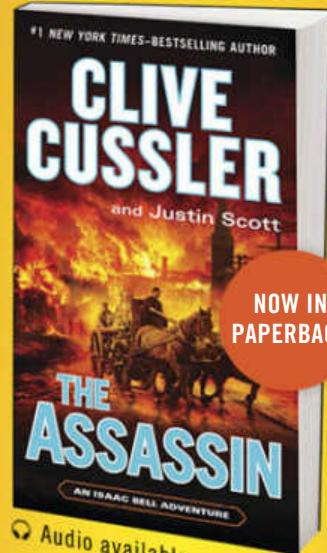
**ROADHOLDING:** The maximum lateral acceleration possible during cornering. The published figure is the average of one complete lap in each direction around a 200- or 300-foot-diameter skidpad.

**EPA CITY/HIGHWAY FUEL ECONOMY:** The fuel consumption measured in government laboratory tests.

MODEL (MONTH TESTED)	PRICE AS TESTED \$	0-60/1/4-MILE sec	TOP SPEED mph	BRAKING 70-0 MPH feet	ROAD-HOLDING g	EPA CITY/HWY mpg
ACURA ILX A-SPEC (8/15)	35,810	6.6/15.2	133	184	0.83	25/36
ALFA ROMEO 4C (11/14)	68,495	4.1/12.8	159	144	1.00	24/34
ASTON MARTIN VANQUISH (7/13)	303,635	4.1/12.3	183	155	0.95	13/19
AUDI ALLROAD QUATTRO (6/14)	48,745	6.3/14.9	128	161	0.87	20/27
AUDI A3 CABRIOLET 1.8T (4/15)	42,195	7.2/15.7	130	166	0.86	24/35
AUDI A3 1.8T (11/14)	36,645	6.5/15.2	129	162	0.92	23/33
AUDI A4 2.0T QUATTRO (5/12)	43,075	5.6/14.4	128	166	0.88	21/29
AUDI A6 3.0T (12/13)	62,745	5.6/14.0	129	171	0.88	18/27
AUDI A8L 4.0T (5/13)	107,645	3.9/12.4	131	169	0.86	16/26
AUDI Q7 3.0T (3/16)	72,875	5.5/14.2	128	166	0.85	19/25
AUDI RS5 (11/12)	77,320	4.4/12.8	178	158	0.96	16/23
AUDI S3 (9/14)	41,995*	4.4/12.9	155*	160	-	23/31
AUDI S5 (5/15)	59,325	4.5/13.1	153	167	0.90	18/28
AUDI S8 (4/13)	125,995	3.6/11.9	155	156	0.90	15/26
AUDI TTS (3/16)	59,100	4.2/12.8	155	157	0.98	23/27
BENTLEY CONTINENTAL GTC V-8 (12/12)	225,740	4.2/12.7	187	175	0.85	14/24
BMW i3 (9/14)	51,175	6.5/15.3	92	163	0.78	137/111†
BMW i8 (3/15)	148,250	3.6/12.1	155	166	0.93	28/29/76‡
BMW M3 (8/15)	84,325	3.8/12.2	163	150	0.97	17/24
BMW M4 (8/14)	80,325	3.9/12.1	155*	151	0.98	17/24
BMW M6 GRAN COUPE (10/13)	145,155	3.5/11.7	190*	144	-	14/20
BMW X1 xDRIVE28i (3/16)	45,920	6.4/14.9	129	180	0.87	22/32
BMW X3 xDRIVE28i (3/13)	52,345	6.2/14.8	127	180	0.86	21/28
BMW X5 xDRIVE35i (3/16)	68,270	5.8/14.5	127	178	0.79	18/24
BMW X6 M (1/16)	114,795	3.7/12.1	160	152	1.01	14/19
BMW 228i (6/14)	38,225	4.9/13.7	153	161	0.86	23/36
BMW 328i xDRIVE SPORTS WAGON (6/14)	47,775	5.8/14.3	128	165	0.86	22/33
BMW 340i (2/16)	58,420	4.8/13.3	155	159	0.91	20/30
BMW 428i GRAN COUPE (12/14)	52,300	5.5/14.2	156	162	0.89	23/34
BMW 435i (4/14)	57,225	5.2/13.7	155	170	0.90	20/30
BMW 535i xDRIVE (12/13)	67,600	5.3/13.9	127	172	0.86	20/29
BMW 750i xDRIVE (12/15)	129,245	4.4/12.8	155	161	0.88	16/25
BUICK ENCORE (4/13)	31,530	9.3/17.1	116	175	0.82	25/33
CADILLAC ATS COUPE 3.6 (5/15)	52,315	5.6/14.1	149	157	0.94	18/28
CADILLAC ATS 3.6 (6/13)	49,185	5.6/14.2	152	163	0.91	19/28
CADILLAC ATS-V (8/15)	73,655	3.9/12.1	185*	154	1.02	16/24
CADILLAC CTS-V (9/15)	95,290	3.6/11.8	200*	149	0.98	14/20*
CADILLAC ELR (2/14)	82,135	8.1/16.5	107	173	0.84	32/38*
CHEVROLET CAMARO SS (12/15)	47,480	3.9/12.3	165*	147	0.98	16/26*
CHEVROLET CAMARO SS ILE (12/14)	41,880	4.5/12.9	156	145	1.01	16/24
CHEVROLET CAMARO Z/28 (5/14)	76,150	4.4/12.7	172*	155	-	14/19
CHEVROLET COLORADO LT CREW CAB 4WD (11/15)	38,720	7.6/15.9	99	197	0.73	17/24
CHEVROLET CORVETTE STINGRAY CONV. (6/14)	76,725	3.7/12.1	185*	141	1.00	16/28
CHEVROLET CORVETTE STINGRAY Z51 (2/16)	70,830	3.9/12.2	181	149	1.05	17/29
CHEVROLET CORVETTE Z06 (1/15)	97,595	3.0/11.1	185*	128	1.19	13/21
CHEVROLET CRUZE 2.0T (9/13)	25,810	8.0/16.3	125	180	0.81	27/46
CHEVROLET IMPALA LT 2.5 (11/13)	34,795	8.7/16.8	132	168	0.84	21/31
CHEVROLET MALIBU PREMIER (1/16)	34,285	6.1/14.7	156	167	0.87	22/32
CHEVROLET SILVERADO 1500 HIGH COUNTRY (2/15)	56,485	5.7/14.3	99	186	0.73	15/21
CHEVROLET SONIC RS (7/13)	20,995	8.1/16.3	124	163	0.84	27/34
CHEVROLET SPARK (8/13)	15,895	11.2/18.3	109	176	0.79	32/38
CHEVROLET SS MANUAL (2/15)	47,640	4.6/13.0	160*	159	0.97	15/21
CHEVROLET TAHOE LTZ (1/15)	65,430	6.7/15.2	114	180	0.79	16/22
CHEVROLET TRAX LT AWD (9/15)	25,540	9.8/17.5	115	169	0.72	24/31
CHEVROLET VOLT PREMIER (10/15)	40,500	7.8/16.1	101	181	0.80	43/42/106‡
CHRYSLER 200S V-6 AWD (9/14)	32,775	6.0/14.5	121	186	0.80	18/29
DODGE CHALLENGER R/T SCAT PACK (12/14)	39,490	4.4/12.9	176	151	0.91	14/23
DODGE CHARGER SRT HELLCAT (2/15)	69,965	3.4/11.4	204	153	0.94	13/22
FERRARI CALIFORNIA T (6/15)	268,761	3.3/11.3	196	162	0.95	16/23
FERRARI 458 ITALIA (9/11)	332,032	3.0/11.0	210*	146	1.01	12/18
FIAT 500 ABARTH (7/14)	25,995	7.0/15.7	129	195	0.82	28/34
FORD ESCAPE SEL 4WD (9/12)	33,630	9.1/16.9	117	174	0.81	22/30
FORD EXPEDITION PLATINUM (1/15)	64,365	6.4/15.0	113	170	0.78	15/20
FORD FIESTA ST (7/14)	25,390	6.7/15.1	143	172	0.87	26/35
FORD FOCUS ST (12/12)	28,170	6.3/14.8	148	164	0.93	23/32
FORD F-150 PLATINUM 3.5L ECOBOOST 4WD (2/15)	61,520	5.6/14.4	107	179	0.75	17/23
FORD F-150 XL SUPERCAST 2.7 ECOBOOST 4X4 (5/15)	42,805	5.7/14.3	104	174	-	18/23
FORD MUSTANG ECOBOOST (4/15)	38,585	5.5/13.9	148	157	0.98	22/31
FORD MUSTANG GT (12/15)	43,070	4.4/13.0	164	157	0.94	15/25
FORD MUSTANG SHELBY GT350 (2/16)	56,970	4.3/12.5	175*	171	1.00	14/21
FORD TRANSIT 150 POWER STROKE (10/15)	42,180	10.6/17.9	98	184	0.60	-
GMC SIERRA 2500HD DENALI 4X4 CREW CAB (8/14)	64,630	7.4/15.9	97	217	0.71	-
HONDA ACCORD EX-L V-6 COUPE (4/13)	33,140	5.5/14.1	125	169	0.86	21/32
HONDA CIVIC TOURING (12/15)	26,500*	6.8/15.3	126	178	0.82	32/42*
HONDA CR-V TOURING AWD (1/15)	33,600	8.2/16.6	120	171	0.76	26/33
HONDA FIT EX (7/14)	18,225	8.0/16.2	118	178	0.79	29/37
HONDA HR-V EX-L AWD (9/15)	26,720	9.3/17.4	117	170	0.84	27/32
HONDA ODYSSEY ELITE (3/15)	45,480	7.7/15.9	120	178	0.77	19/28
HONDA PILOT ELITE AWD (8/15)	47,300	6.1/14.8	114	180	0.80	19/26
HONDA GENESIS 5.0 (9/14)	55,700	5.0/13.6	145	167	0.86	15/23
HONDA SONATA SPORT (1/15)	23,985	7.9/16.2	132	165	0.84	24/35
HONDA TUCSON LIMITED AWD (9/12)	27,420	8.8/17.0	110	180	0.77	21/28
INFINITI Q50S 3.7 (7/14)	50,955	4.9/13.5	144	156	0.95	20/29
JAGUAR F-TYPE R COUPE (6/15)	110,845	3.4/11.7	186*	137	1.00	15/23
JAGUAR F-TYPE V-8 S (6/14)	100,370	3.7/12.0	171	147	0.96	16/23

NEW FROM THE GRAND  
MASTER OF ADVENTURE

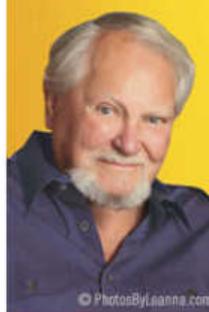
# CLIVE CUSSLER



NOW IN  
PAPERBACK

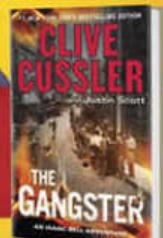
Audio available

PRIVATE DETECTIVE ISAAC BELL is investigating the Standard Oil monopoly, but the case takes a deadly turn when a sniper begins murdering Standard Oil's opponents. When the assassin kills Bell's best witness, Bell must track his adversary across the U.S. to Russia's war-torn oil fields and back to America for a final, desperate confrontation—the most explosive one of all.



“Historical  
action-adventure  
fiction at its  
rip-roaring best!”

—LIBRARY JOURNAL



THE GANGSTER  
in hardcover now

**f** CliveCussler  
CusslerBooks.com

PYRAMID

Penguin  
Random  
House

MODEL (MONTH TESTED)	PRICE AS TESTED	0-60/ 1/4-MILE	TOP SPEED	BRAKING 70-0 MPH	ROAD- HOLDING	EPA CITY/HWY
	\$	sec	mph	feet	g	mpg
JAGUAR XE S (8/15)	57,000*	4.5/13.1	155*	151	0.96	22/30*
JEEP CHEROKEE LIMITED 4X4 (4/14)	37,525	6.9/15.3	119	166	0.79	19/27
JEEP GRAND CHEROKEE ECO DIESEL 4X4 (6/13)	56,990	8.0/16.1	119	184	0.72	21/28
JEEP RENEGADE LATITUDE 4X4 (9/15)	26,360	9.1/17.0	114	181	0.74	21/29
JEEP WRANGLER WILLYS (7/14)	30,980	6.6/15.3	99	210	0.60	17/21
KIA FORTE EX (6/14)	20,300	7.3/15.6	138	160	0.86	24/36
KIA OPTIMA LX 1.6T (2/16)	24,815	7.3/15.8	134	185	0.83	28/39
KIA SEDONA SXL (3/15)	43,295	7.4/15.8	122	167	0.81	17/22
KIA SOUL + (9/15)	24,750	8.5/16.7	116	167	0.78	23/31
KIA SPORTAGE EX AWD (9/12)	30,150	9.3/17.3	110	179	0.79	21/28
LAMBORGHINI HURACÁN LP610-4 (9/14)	256,745*	2.5/10.4	202*	144	1.01	14/20
LAND ROVER RANGE ROVER EVOQUE (3/13)	56,795	6.6/15.1	133	165	0.83	20/28
LAND ROVER RANGE ROVER SPORT SVR (11/15)	87,281	5.9/14.5	130*	176	0.78	17/23
LAND ROVER RANGE ROVER SPORT SVR (11/15)	124,540	4.3/12.8	144	179	0.87	14/19
LEXUS IS350 F SPORT (6/13)	49,000*	5.6/14.0	143*	177	0.85	19/28
LEXUS RC F (12/14)	76,065	4.3/12.8	171	154	0.95	16/25
LEXUS RC350 F SPORT (5/15)	54,405	6.0/14.5	146	178	0.85	19/28
LINCOLN MKX RESERVE AWD (11/15)	63,275	6.0/14.5	133	171	0.82	17/24
MASERATI GHIBLI S 04 (5/14)	100,140	4.7/13.4	175	155	0.91	15/25
MAZDA CX-3 TOURING AWD (9/15)	25,500	8.1/16.3	120	181	0.81	27/32
MAZDA CX-5 GRAND TOURING AWD (6/13)	31,890	7.6/15.8	123	166	0.81	24/30
MAZDA MX-5 MIATA CLUB (8/15)	33,320	5.9/14.6	129	158	0.90	27/34
MAZDA MX-5 MIATA GT AUTOMATIC (3/16)	32,090	6.4/15.1	125*	158	0.90	27/36
MAZDA 3 i TOURING (6/14)	23,235	7.6/15.9	133	167	0.82	30/41
MCLAREN MP4-12C (9/11)	303,690*	2.9/10.7	205*	145	1.02	15/22
MCLAREN 650S SPIDER (6/15)	35,935	2.8/10.5	207	155	1.07	16/22
MERCEDES-AMG C63 S (8/15)	91,585	3.9/12.2	180*	147	0.98	18/25
MERCEDES-AMG GLE63 S COUPE (1/16)	118,610	3.9/12.5	160*	159	0.95	14/18
MERCEDES-AMG GT S (6/15)	151,075	3.0/11.2	193*	141	1.05	16/24*
MERCEDES-AMG G65 (4/16)	221,925	5.1/13.6	140	165	0.58	11/13
MERCEDES-BENZ CLA250 (12/13)	35,855	6.3/14.9	133	160	0.90	26/38
MERCEDES-BENZ C450 AMG (1/16)	65,555	4.5/13.1	131	160	0.93	21/29
MERCEDES-BENZ E350 (12/13)	63,490	6.0/14.6	133	175	0.83	21/30
MERCEDES-BENZ GLA45 AMG (1/15)	67,695	4.2/12.8	158	151	0.96	23/29
MERCEDES-BENZ GLK250 BLUETEC (10/13)	50,995	8.1/16.2	129	185	0.80	24/33
MERCEDES-BENZ GL63 AMG (2/13)	130,000*	4.8/13.2	156	162	0.84	13/17
MERCEDES-BENZ SLS AMG BLACK (1/14)	296,950	3.2/11.2	196*	151	0.98	13/17
MERCEDES-BENZ S63 AMG 4MATIC (8/14)	168,285	3.8/12.2	187	155	0.93	15/23
MERCEDES-BENZ S550 (11/13)	113,815	4.9/13.4	132	171	0.87	17/25
MERCEDES-MAYBACH S600 (4/15)	199,500*	4.7/13.1	130	167	0.88	12/20*
MINI COOPER HARDTOP (12/14)	30,400	7.3/15.8	132	169	0.86	30/42
MINI COOPER S HARDTOP (7/14)	27,595	6.8/15.1	146*	191	0.84	25/38
NISSAN GT-R NISMO (4/15)	151,880	2.9/11.0	191	152	1.02	16/23
NISSAN LEAF SL (3/14)	36,910	10.2/17.7	94	180	0.80	129/102†
NISSAN MAXIMA SR (9/15)	38,945	5.9/14.4	135*	168	0.87	22/30
NISSAN SENTRA SL 1.8 (12/12)	23,420	9.2/17.2	118	172	0.81	30/39
NISSAN TITAN XD PLATINUM RESERVE (2/16)	60,000*	9.2/17.0	106	192	0.74	—
PORSCHE BOXSTER S (9/12)	85,410	4.4/12.9	176	147	0.99	20/28
PORSCHE CAYENNE GTS (4/13)	137,195	5.5/13.9	156	151	0.95	15/21
PORSCHE CAYMAN (11/14)	70,345	5.3/13.9	165	148	1.03	21/30
PORSCHE CAYMAN GT4 (11/15)	104,815	4.1/12.3	183*	151	1.01	18/23
PORSCHE MACAN S (6/15)	62,230	4.6/13.3	156	186	0.82	17/23
PORSCHE MACAN TURBO (12/14)	104,440	4.2/12.9	164	150	0.89	17/23
PORSCHE 911 CARRERA GTS (6/15)	138,750	3.6/11.9	189*	136	1.06	19/26
PORSCHE 911 CARRERA S (11/13)	148,245	4.0/12.4	188*	147	1.06	19/27
PORSCHE 911 CARRERA S CABRIOLET (5/13)	136,430	4.3/12.7	187*	149	1.03	19/27
PORSCHE 911 GT3 (11/13)	142,265	3.0/11.2	195*	135	1.12	15/20
PORSCHE 911 TURBO S (4/15)	195,175	2.5/10.6	198*	145	1.07	17/24
PORSCHE 918 SPYDER (8/14)	875,175	2.2/9.8	214*	142	1.10	20/24
RAM PROMASTER 1500 ECO DIESEL (10/15)	37,590	13.4/19.7	101	201	0.60	—
RAM 1500 LARAMIE LONGHORN LTD 4X4 (2/15)	57,810	7.4/15.7	107	199	0.71	15/21
SCION FR-S (10/12)	25,092	6.4/14.9	136	166	0.96	23/30
SCION iM (11/15)	19,255	8.6/16.8	112	176	0.80	27/36
SMART FORTWO ED CABRIOLET (3/14)	30,040	9.8/17.5	78	190	0.76	122/93†
SRT VIPER GTS (2/13)	140,990	3.2/11.5	206*	146	1.02	12/19
SUBARU FORESTER 2.5i TOURING (6/13)	33,220	8.6/16.7	122	166	0.78	24/32
SUBARU WRX (9/14)	29,290	5.1/13.8	144	159	0.92	21/28
TESLA MODEL S P90D (2/16)	134,200	2.8/11.1	155	159	0.90	89/98†
TESLA MODEL S SIGNATURE PERFORMANCE (1/13)	109,600	4.6/13.3	134	160	0.91	88/90†
TOYOTA AVALON XLE (7/13)	36,549	6.1/14.5	127	178	0.82	21/31
TOYOTA CAMRY XSE V-6 (2/15)	35,768	5.8/14.3	126	178	0.81	21/31
TOYOTA COROLLA S (6/14)	22,870	9.5/17.4	111	180	0.82	29/37
TOYOTA MIRAI (9/15)	58,325	9.4/17.2	108	194	—	67/67†
TOYOTA PRIUS TWO ECO (3/16)	25,930	9.4/17.2	115	175	0.84	58/53*
TOYOTA SIENNA LIMITED (3/15)	48,035	7.6/15.8	113	180	0.78	18/25
TOYOTA TACOMA TRD OFF-ROAD DBLE CAB 4X4 (11/15)	37,665	8.1/16.2	110*	195	0.64	18/23
TOYOTA TUNDRA PLATINUM 4X4 CREWMAX (2/15)	49,820	6.7/15.3	108	189	0.71	13/17
VOLKSWAGEN BEETLE GSR (4/14)	30,850	6.0/14.8	127	165	0.89	21/30
VOLKSWAGEN GOLF R (5/15)	39,910	4.5/13.2	153	157	0.94	23/30
VOLKSWAGEN GOLF TSI (11/14)	26,775	7.7/15.9	124	173	0.85	26/37
VOLKSWAGEN GTI (9/14)	28,305	5.8/14.4	124	163	0.91	25/34
VOLKSWAGEN JETTA SE (6/14)	22,635	7.3/15.5	126	166	0.86	25/36
VOLVO S60 T6 DRIVE-E (9/14)	47,925	5.4/14.0	131	193	0.86	24/35
VOLVO V60 T6 AWD R-DESIGN (6/14)	50,475	5.0/13.6	132	177	0.84	19/28
VOLVO XC90 T6 AWD INSCRIPTION (3/16)	67,055	6.0/14.6	132	167	0.84	20/25

\*ESTIMATED †MPGe #EPA COMBINED MPG

YOU LITERALLY  
WON'T HAVE TO  
**LIFT A  
FINGER**



With the press of a button,  
you can restore your car's  
original paint. Our online  
videos will show you how to  
tackle most repairs in  
a single afternoon.



Paint pens >>  $\frac{1}{2}$  oz & 2 oz bottles  
12 oz spray cans >> Ready-to-spray pints,  
quarts and gallons

**AUTOMOTIVETOUCHUP.COM**  
**888-710-5192**

PROMOTION

Promotions • Products • Experience

# THE **DRIVER'S SEAT**



## YARDBIRD SOUTHERN TABLE & BAR

We proudly present Yardbird, a house of worship to farm-fresh ingredients, classic Southern cooking, culture and hospitality. We're serving up the most inventive takes on regional Southern fare seven days a week with a foot-stompin', soul-healin' brunch on the weekends.

Call (702) 297-6541 or visit [www.runchickenrun.com](http://www.runchickenrun.com)  
for more information.



✓ Reliably Low Prices  
✓ Easy To Use Website  
✓ Huge Selection  
✓ Fast Shipping  
[www.rockauto.com](http://www.rockauto.com)

**RA**  
**ROCKAUTO.COM**  
ALL THE PARTS YOUR CAR WILL EVER NEED.

# HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES



600+ Stores  
Nationwide

**SUPER COUPON**

**130 PIECE TOOL KIT PITTSBURGH WITH CASE**  
LOT 69331  
630981  
68998 shown  
**SAVE 54%**  
**\$32.99** comp of \$72.88

**Customer Rating**

**20905214**

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**MECHANIC'S GLOVES**  
SIZE LOT  
MED 62434/62426  
LG 62433/62428  
X-LG 62432/62429  
**HARDY**  
YOUR CHOICE  
**NEW**  
**\$3.99**  
Item 62429 shown comp of \$11.99

**SAVE 66%**  
**\$3.99**

**20890234**

LIMIT 1 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one FREE GIFT coupon per customer per day.

**WOW SUPER COUPON**

**12 VOLT, 10/2/50 AMP BATTERY CHARGER/ENGINE STARTER CENTECH**  
LOT 60653 shown  
66783/60581/62334  
**\$29.99**  
~~\$49.99~~  
comp of \$69.99

**SAVE 57%**  
**\$29.99**

**20915470**

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**MOVER'S DOLLY HaulMaster**  
LOT 60497/61899/62398/63095  
63098/63098/63097/93886 shown  
**\$7.99** comp of \$19.97  
**SAVE 59%**

**1000 lb. capacity**

**209111952**

LIMIT 7 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**20 TON SHOP PRESS**  
• Pair of after plates included  
**Customer Rating**

**\$159.99** comp of \$369.99

**208800556**

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**20% OFF**  
ANY SINGLE ITEM

**20905214**

LIMIT 1 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one FREE GIFT coupon per customer per day.

How Does Harbor Freight  
Sell GREAT QUALITY Tools  
at the LOWEST Prices?

We have invested millions of dollars in our own state-of-the-art quality test labs and millions more in our factories, so our tools will go toe-to-toe with the top professional brands. And we can sell them for a fraction of the price because we cut out the middle man and pass the savings on to you. It's just that simple! Come visit one of our 600+ Stores Nationwide.

**SUPER COUPON**

**FREE**  
WITH ANY PURCHASE  
3-1/2" SUPER BRIGHT NINE LED ALUMINUM FLASHLIGHT  
LOT 69052 shown  
691122/62529  
62573/65082  
**\$4.98** VALUE  
**20891615**

LIMIT 1 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Offer while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one FREE GIFT coupon per customer per day.

**SUPER COUPON**

**PNEUMATIC ADJUSTABLE ROLLER SEAT**  
PITTBURGH  
LOT 46319 shown  
61160/61895  
**Customer Rating**

**SAVE 50%**  
**\$19.99** comp of \$39.99

**300 lb. capacity**

**20880695**

LIMIT 7 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**2.5 HP, 21 GALLON 125 PSI VERTICAL AIR COMPRESSOR**  
CENTRALPNEUMATIC  
Customer Rating

**SAVE \$349**  
**\$149.99** comp of \$499

**20891674**

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**4 PIECE 1" x 15 FT. RATCHETING TIE DOWNS**  
LOT 83056/63057/63097/62322/60994 shown  
HaulMaster  
**Customer Rating**

**SAVE 60%**  
**\$7.99** comp of \$20.37

**208811672**

LIMIT 8 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**44", 13 DRAWER INDUSTRIAL QUALITY ROLLER CABINET**  
LOT 69387/62270  
Husky  
**Customer Rating**

**SAVE \$60**  
**\$36.99** comp of \$102.99

**20881087**

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**18 VOLT CORDLESS 3/8" DRILL/DRIVER WITH KEYLESS CHUCK**  
drillmaster  
LOT 68239 shown  
60651/52858/62873  
includes one 18V NiCd battery and charger  
**\$16.99** comp of \$49.21

**208815220**

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**1/2" ELECTRIC IMPACT WRENCH CHICAGO ELECTRIC POWER TOOLS**  
LOT 69649/61173  
68999 shown  
**\$39.99** comp of \$149.88

**SAVE \$109**

**SUPER COUPON**

**90 AMP FLUX WIRE WELDER**  
CHICAGO ELECTRIC WELDING  
LOT 68687 shown  
• No Gas Required  
**SAVE \$50**  
**\$99.99** comp of \$149.99

**WE CARRY A FULL LINE OF SELLING WIRE**

**208902276**

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

**SUPER COUPON**

**VEHICLE POSITIONING WHEEL DOLLY**  
PITTBURGH  
• 1250 lb. capacity  
LOT 62234  
61917 shown  
**\$69.99** comp of \$269.99

**20920425**

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Other good while supplies last. Non-transferable. Original coupon must be presented. Valid through 7/1/16. Limit one coupon per customer per day.

- 100% Satisfaction Guaranteed
- Over 30 Million Satisfied Customers

- No Hassle Return Policy
- Lifetime Warranty On All Hand Tools

**HarborFreight.com**  
**800-423-2567**

# WeatherTech®

## Automotive Accessories



### FloorLiner™

Provides "absolute interior protection™"

Laser measured to perfectly fit your vehicle

Has channels to carry fluids and debris to a lower reservoir

Material provides soft touch top, rigid core strength and bottom surface friction

See our full line of Automotive Accessories at [WeatherTech.com](http://WeatherTech.com)



### BumpStep® Hitch Mounted Bumper Protection



### License Plate Frames

Many styles and colors available

Visit [WeatherTech.com](http://WeatherTech.com) to view the full selection

### Custom-Fit Car Covers

Made from high-quality durable materials that mold to the contours of your vehicle

Indoor and Outdoor options available

### Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti · Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan · Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: **800-441-6287**



American Customers  
[WeatherTech.com](http://WeatherTech.com)



Canadian Customers  
[WeatherTech.ca](http://WeatherTech.ca)



European Customers  
[WeatherTechEurope.com](http://WeatherTechEurope.com)

## THE LAST AIR FILTER YOU'LL EVER BUY!

### K&N AIR FILTERS

The washable and reusable pleated and oiled cotton gauze filtration medium runs up to 50,000 miles between cleanings, depending on highway conditions. Backed by a 10-year / 1,000,000 Mile Warranty. Installs in minutes.

#### "Amazing Filters!"

"K&N are the best filters on the market. I wouldn't use anything else. The first thing I do when I buy a new truck is order a K&N Filter for it. Thanks K&N!!!"  
- Lewis W. (West Haven, UT)



**FROM \$34.99**

## MORE POWER & TORQUE!

### K&N COLD AIR INTAKES\*

Boost power and torque with a K&N Cold Air Intake. Custom-engineered with the famous K&N Filtercharger cone filter and power-tuned intake tract. Backed by a 10-year / 1,000,000 Mile Warranty. Easy installation.

**FROM \$129.99**



\*Street legal in most states. Some intake systems are not legal for use on certain vehicles in California or other states adopting CA emission standards. See online for CARB status on each part for a specific vehicle.



## ADD EXTREME POWER & SOUND!

**FROM \$248.97**



### FLOWMASTER PERFORMANCE EXHAUST SYSTEMS

You don't just get a little sound and power with Flowmaster's legendary kits—you get overwhelming horsepower gains, a handy boost in MPG, and the most famous exhaust tone in the automotive world. Make your ride rumble from headers to tips!

#### "Sounds Amazing!"

"My baby sounds great and aggressive, love the way it looks plus its sounds amazing. Excellent product." - Alberto P. (Grovetown, GA)



**The Better Alternative to Leather!**

**FROM \$299.99 ROW**

"I CAN'T BELIEVE IT'S NOT LEATHER" CUSTOM SEAT COVERS

## ADD SUPERIOR STYLE AND PROTECTION!



### CALTREND CUSTOM SEAT COVERS

Custom seat covers by CalTrend are the best way to add value, protection and style to your vehicle's interior. CalTrend guarantees a perfect fit every time, and their brilliant designs always ensure an easy installation. And, CalTrend offers their seat covers in a wide variety of colors and materials to match any interior. Backed by a 5-year warranty and proudly made in the U.S.A.



NEOSUPREME CUSTOM SEAT COVERS

**Like a Wetsuit for Your Seats!**

REAR FRONT

**FROM \$199.99 ROW**

## GEAR UP FOR SPRING TRAVEL! VISIT US ONLINE FOR OUR COMPLETE SELECTION OF SPRING DRIVING ACCESSORIES.



### PET TRAVEL

Invite your four legged friend to travel in style with our huge selection of pet travel accessories.



### BIKE RACKS

When the trails call your name, will you be ready? Deck out your auto with quality bike racks for less from AutoAnything.



### HUSKY LINERS FLOOR LINERS

Husky Liners custom floor liners keep the mess on the mat and off your vehicle's expensive, hard to clean carpet.



### CUSTOM CAR COVERS

A custom car cover protects your paint from the elements and preserve your resale value.

**AutoAnything.com | 888.686.5870**



**FREE SHIPPING<sup>1</sup>**

No Hidden Fees



**1-YEAR PRICE GUARANTEE<sup>2</sup>**

All Prices Backed for a Full Year from Purchase

© 2013. AutoAnything, Inc. All Rights Reserved. AutoAnything is a registered mark of AutoAnything, Inc. All other marks are the property of their respective owners. Prices subject to change. Not responsible for typographical errors. 1. Free Shipping to Continental US only. No APO/Po. Truck, oversized & select shipments excluded. 2. Find it for less and we'll refund the difference up to 1 year from purchase. Some restrictions apply. See website for complete details and restrictions.

## DR® CHIPPERS, now at our Lowest Prices EVER!

- Chip big branches up to 5.75" thick!
- Models that shred yard and garden waste as well as CHIP branches.



NEW MODELS  
Starting \$799.99  
at just...

FREE SHIPPING 6 MONTH TRIAL

SOME LIMITATIONS APPLY

Call for FREE DVD and Catalog!

TOLL FREE 877-200-6649

DRchipper.com

Now with Power Steering!

## America's #1 Selling Brush Mower for Over 25 Years!

- The power to mow down saplings up to 3" thick.
- New wide cut models (up to 34" cut) for faster mowing!



FREE SHIPPING 6 MONTH TRIAL

SOME LIMITATIONS APPLY

Call for FREE DVD and Catalog!

TOLL FREE 877-200-6649

DRfieldbrush.com

## BRAKEWORLD

GUARANTEED BEST PRICE • LARGEST SELECTION  
GUARANTEED FITMENT • ADVICE YOU CAN TRUST

### ULTRA HIGH QUALITY ROTORS

- Massive Stopping Power
- Cooler Brakes
- Longer Rotor Life

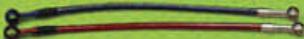


### PERFORMANCE BRAKE PADS

- NO BLACK DUST
- Super Quiet & Clean
- Shorter Stopping Distance
- Longer Pad Life
- Advanced Ceramic & Kevlar Pads



### STAINLESS STEEL BRAKE LINES



### PROTECTED NANO COATED ROTORS

#### AVAILABLE IN:

- Chrome
- Black
- Red
- Gold
- Blue



SHOP ONLINE 24/7 [WWW.BRAKEWORLD.COM](http://WWW.BRAKEWORLD.COM)

TOLLFREE: 866.272.5396

WHOLESALE PRICES!!

## PARTS

### EXPRESS

YOUR ELECTRONICS CONNECTION™

### PARTS SOLUTIONS

WEBSITE

CDM

PRICE • FREE 2-DAY SHIPPING (CONT'L USA) • SHIPS IN ONE BUSINESS DAY • MIRROR POCKETS • FRONT &amp; REAR REFLECTOR STRIPS • PATENT PENDING DESIGN • FREE FABRIC SAMPLE

**I THINK I'VE MET MY COVER**

—Dodge Challenger owner

Practically custom **SELECT-FIT** outdoor/indoor car covers and **SELECT-FLEECE** indoor car covers are complete kits that include free storage bag, adjustment straps, cable and lock.

Free 2-Day Shipping Code  
**CD2DAY**

**GREAT FIT!** ★★★★★  
—Mercedes-Benz CLA250 owner —Tesla Model S owner

Outdoor/Indoor **SELECT-FIT** only \$99.95  
Indoor **SELECT-FLEECE** now \$139.95  
Get both **FIT + FLEECE** covers for \$230.00

**MICROBEAD**

MicrobeadCarCovers.com

**888-627-1129**TEXT YOUR YEAR, MAKE AND MODEL  
TO 617-657-4212 FOR MORE INFO

• LIFETIME REPLACEMENT WARRANTY •

MICROBEAD SELECT-FIT AND SELECT-FLEECE CAR COVERS FEATURE PRATICALLY CUSTOM-FIT FOR LESS THAN HALF THE

**2016 SPRING BENEFIT RAFFLE  
ENTER TODAY - Win this week!****WIN \$500 IN ANY OF 22 BONUS DRAWINGS****Grand Prize Drawing — May 26, 2016 @ 2pm**

**Grand Prize Winner** • Porsche Cayenne • Mercedes Benz GLE 450 AMG Coupe  
has a choice of: • BMW X6 xDrive 3.5i • \$50,000 CASH!

**\$100 PER TICKET**Only 1500 tickets available  
Enter Early!Bonus drawings are every  
Tuesday and Thursday at 2:00pm EST  
beginning March 8 through May 19, 2016.To qualify, you must enter by  
1pm EST the day of the drawing.  
Bonus winners receive \$500!**Grand Prize Drawing**  
2pm EST May 26, 2016

**ladd**  
Living Arrangements for  
the Developmentally Disabled

• LADDinc  
• @LADD...Inc

**Easy to Enter:**

- **ONLINE:** Make a secure ticket purchase at [www.laddinc.org](http://www.laddinc.org)
- **CALL TOLL FREE:** 1-877-861-5233 Monday through Friday,  
8:00am to 5:00pm EST
- **BY MAIL:** Download an official entry form at [www.laddinc.org](http://www.laddinc.org)  
and mail to LADD

All ticket purchases benefit the people served by Living Arrangements for the Developmentally Disabled (LADD). Founded in 1975, LADD is a designated 501(c)3 by the IRS. The Grand Prize drawing is overseen by a representative from the auditing firm of Barnes, Dennig & Co., Ltd. Raffle Rules at: [www.laddinc.org/benefit-car-raffle](http://www.laddinc.org/benefit-car-raffle)

Contact us: LADD, Inc. • 3603 Victory Parkway • Cincinnati, OH 45229 Phone: 513.487.3955 • Email: [raffle@laddinc.org](mailto:raffle@laddinc.org)

According to the Internal Revenue Code the amount paid for chances to participate in a raffle does not qualify as a charitable contribution.

**NEW!**

**Oil Vanish**  
Oil Stain Remover

Before      After

Available at these fine retailers

Quickly dissolves oil stains from driveways, garages and parking areas.

Penetrates deep to lift the toughest stains - new or old.

Easy-to-Use:  
Apply, Scrub  
and Rinse.

Removes Oil & Grease Stains from Concrete, Driveways, Garages & Parking Areas.

Visit [OilVanish.com](http://OilVanish.com)**BMW & MINI parts**

- Free shipping over \$150 (most orders)
- Free DIY video guides
- Free color catalogs

**BAVARIAN**  
auto sport

BMW since 1974. MINI since 2002.

**800.535.2002 | [BavAuto.com](http://BavAuto.com)**

...For advertising information call 212-649-4201 or 212-649-4204, 9am-5pm EST

# what we'd do differently...

104

04.2016

JAMIE HYNEMAN  
AND ADAM SAVAGE

*Jamie Hyneman and Adam Savage have scientifically exploded myths, including automotive ones, as Discovery's MythBusters. This is their 14th and final season.*

**C/D:** *Were there automotive myths too tough to test?*

**JH:** There was one we walked away from. It involved a tanker truck full of liquid oxygen. It's one thing if something's dangerous, and another if it's unpredictably so. What do you do if it doesn't work? What happens if this pure oxygen gasses off and drifts over a nearby freeway? Do all the cars take off at 250 mph? Or do they just burst into flames? You have to think through that sort of stuff.

**AS:** Backwards Porsche was really difficult. The myth was that some cars were more aerodynamic going backwards. We bought a cheap 928 and pulled the body off the floorpan and spun it. It was the toughest car I've had to drive. But we were able to prove that it wasn't more efficient going backwards rather than forwards.

**C/D:** *Was there a car you felt guilty wrecking?*

**AS:** I personally felt it was hardest to cut into a Toyota Corona. But for every single car we've destroyed on the show, there's a fan club that has angrily written to us and said, "How dare you ruin this wonderful example of a great car."

**JH:** There have been a couple that were—arguably—collectors' cars. The most expensive cars we've ended up buying are Chevy Impalas. We destroyed one, two, three... four classic Impalas. I take that back, it's five. We just destroyed one for an episode that hasn't aired yet.

**C/D:** *Is being famous worth the hassle?*

**AS:** One hundred percent. There are tiny inconveniences. Like it's hard for me to go to a Best Buy and just browse. But the feedback I get is incredible, and it's paid for a really nice life for me. I don't begrudge it at all.

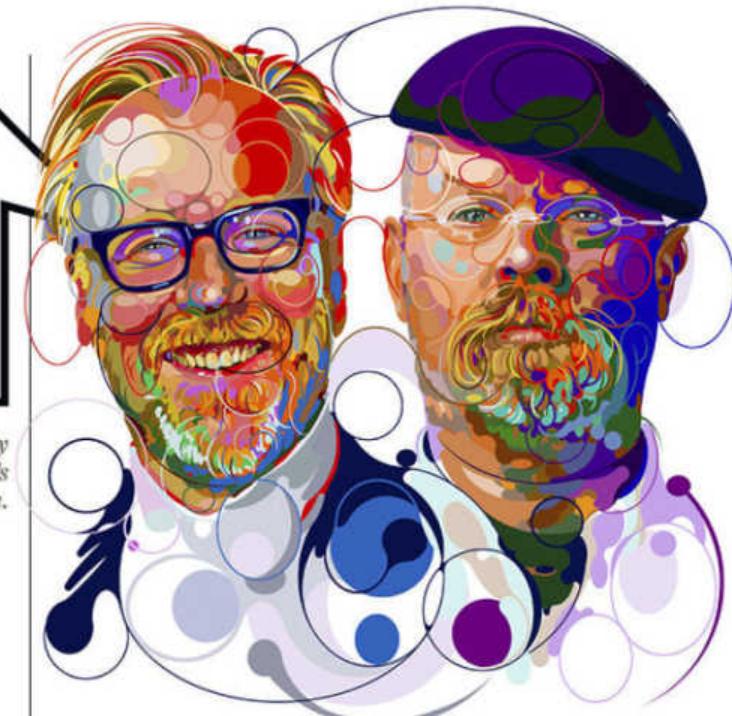
**JH:** That's questionable. You do get special treatment. I can call people up I want access to and get them on the phone. And we're treated with a great deal of respect. It's seductive, though, and you get into a mode where the celebrity is a goal unto itself. And I have ethical issues with that.

**C/D:** *Did you guys have a laserlike focus on becoming the kings of basic cable?*

**JH:** The only reason I ended up here is that, as a small businessperson running my own effects company, I would take on anything I had access to, to pay my rent. It was a good call. And we've been shooting the show for 40 weeks a year for the past 14 years.

**C/D:** *It's been 14 seasons. Are you exhausted?*

**JH:** Yeah, pretty much. I'm excited that now I can afford to get away from the damn cameras. I've got two major engineering projects I'm pushing forward. One is a ship for the Office of Naval Research. The other project is a system I devised to deal with these big fires that are popping up in the West. It involves giant robotic tanks of water.



**C/D:** *Are you ever jealous of Top Gear?*

**AS:** That deal they made with Amazon is pretty friggin' sweet.

**C/D:** *Are you happy to be done with MythBusters?*

**AS:** No, I'm not happy to see it end. Having a behemoth like *MythBusters* on our back has been intense. So I definitely look forward to a greater amount of time and space to stretch my legs. That being said, I've gone through all the stages of grief.

**JH:** Oh, yeah.

**C/D:** *What's next for you?*

**JH:** One of the things I'm likely to start building in my shop is a vehicle wherein each wheel has basically a flight-simulator base as its suspension. It's known as a hexapod; it's basically a tripod but each leg is two pistons. So you have six axes of freedom on it. This will be something that can not only do what lowriders do, but shorten or extend its wheelbase and jump forwards, backwards, or from one side to the other. In an off-road situation it could be rolling at speed toward a ravine and then leap across it.

**AS:** I'm also pitching new shows. And Jamie and I sold a scripted show to CBS. It's about a couple of special-effects guys, based on us, who get hired by the CIA.

**C/D:** *Is there anything you'd have done differently?*

**AS:** No. Most shows like ours don't get to say goodbye and film a final season, let alone a final episode. Mike Rowe didn't get that. I'm really grateful to get to put this show to bed on top.

**JH:** There are a lot of things that I'd do differently. But I can't imagine being more fortunate than I have been.

—JOHN PEARLEY HUFFMAN

**CAR AND DRIVER** © Volume 61, Issue 10, (ISSN 0008-6002) is published 12 times a year by **Hearst Communications, Inc.**, 300 West 57th Street, New York, New York 10019 U.S.A. Frank A. Bennack, Jr., Executive Vice Chairman and Chief Executive Officer of the Board; Steven R. Swartz, President; Catherine A. Bostron, Secretary, Hearst Magazines Division; David Carey, President; John A. Rohan, Jr., Senior Vice President, Finance. © 2016 by **Hearst Communications, Inc.** All rights reserved. **Car and Driver** is a registered trademark of **Hearst Communications, Inc.** Periodicals postage paid at NY, NY, and additional entry post offices. Canada Post International Publications mail product (Canadian distribution) Sales agreement 40012499. Editorial and Advertising Offices: 300 West 57th Street, New York, New York 10019-5239. **SUBSCRIPTION PRICES** U.S. and possessions: \$13.00 for one year. Canada and all other countries: \$29.94 for one year. **SUBSCRIPTION SERVICES** *Car and Driver* will, upon receipt of a complete subscription order, undertake fulfillment of that order so as to provide the first copy for delivery by the Postal Service or alternate carrier within 4-6 weeks.

From time to time, we make our subscriber list available to companies that sell goods and services by mail that we believe would interest our readers. If you would rather not receive such offers via postal mail, please send your current mailing label or exact copy to Mail Preference Service, P.O. Box 37870, Boone, IA 50037. You can also visit <http://hearst.ed4.net/profile/login.cfm> to manage your preferences and opt out of receiving marketing offers by email.

For customer service, changes of address, and subscription orders, log on to [service.caranddriver.com](http://service.caranddriver.com) or write to Customer Service Dept., *Car and Driver*, P.O. Box 37870, Boone, IA 50037. *Car and Driver* is not responsible for unsolicited manuscripts or art. None will be returned unless accompanied by a self-addressed stamped envelope. Authorized periodicals postage by the Post Office Department, Ottawa, Canada, and for payment in cash. **POSTMASTER** Send all UAA to CFS. (See DMM 7074.12.5.) **NON-POSTAL AND MILITARY FACILITIES** send address corrections to *Car and Driver*, P.O. Box 37870, Boone, IA 50037. Printed in the U.S.A.

illustration by **MARTIN SATI**

HANDLE YOURSELF WITH CONFIDENCE AND STYLE  
**ANYWHERE. ANYTIME.  
WITH ANYONE.**

Got a sudden stain on your perfect white dress shirt—just before an important meeting? Need to order a drink for your date? Concerned about how to manscape, buy the perfect gift, leave a dull party gracefully, or navigate the intricacies of any kind of social event? *Esquire's The Biggest Black Book Ever* shows you how to do everything right, in every area of your life.



AVAILABLE  
WHEREVER  
BOOKS  
ARE SOLD

\$24.95 (\$27.95 CAN) IN HARDCOVER | HEARST BOOKS



## Performance that moves you. Beauty that stops you in your tracks.

**Introducing the all-new C-Class Coupe.** Engineered for superior sportiness and equipped with Dynamic Select—a feature that allows you to alter the driving dynamics to your exact liking—the C-Class Coupe will send you, and your heart, racing in seconds. Yet its stunning good looks will just as quickly bring you to a halt. The completely redesigned C-Class Coupe. [MBUSA.com/C-Coupe](http://MBUSA.com/C-Coupe)

Mercedes-Benz  
The best or nothing.

